

Atty & RR

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, FINANCE,
INSURANCE, BANKING, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

SATURDAY, MARCH 19, 1859.

Second Quarto Series, Vol. XV., No. 12.—Whole No. 1,196, Vol. XXXII.

ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

Front Room, Third Floor,

No. 9 Spruce Street.

ROOFING.

FLOORING OF RAILWAY BRIDGES, ETC.

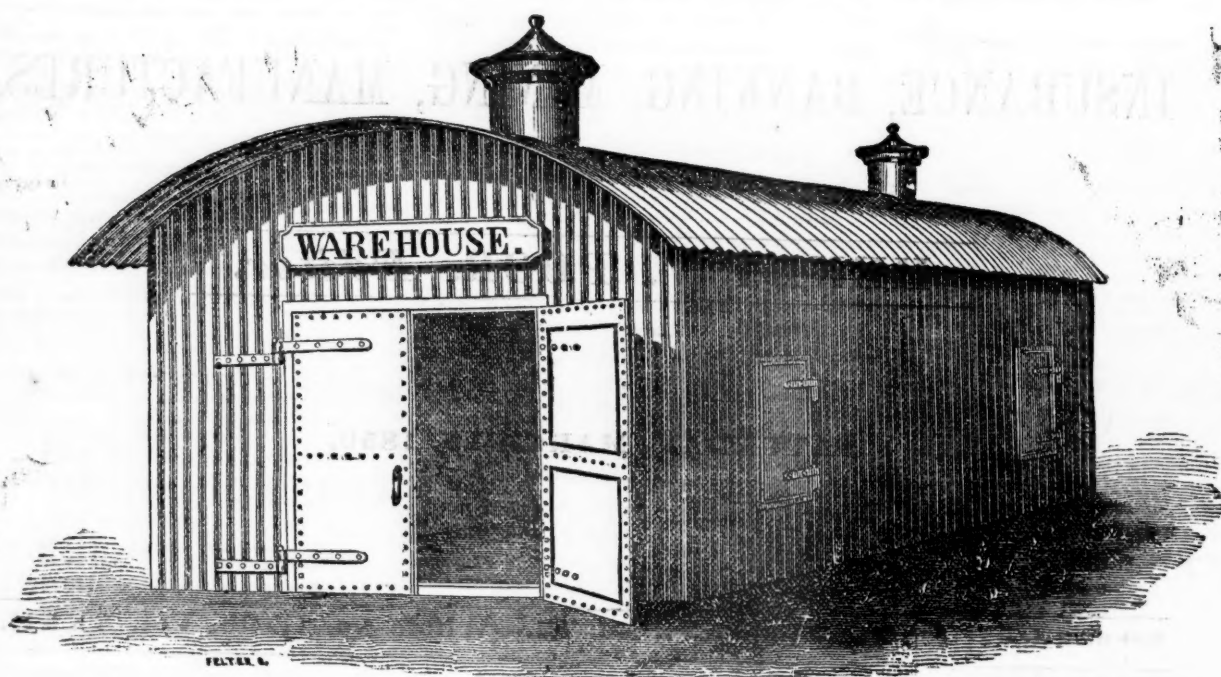
GALVANIZED SHEET IRON,

CORRUGATED OR PLAIN;

ORDINARY SHEET IRON PREPARED IN THE SAME WAY.

Plans and Estimates given for IRON ROOFS to be erected in any part of the UNITED STATES.

Cornices, Gutters, Ridge Caps, Leaders, Spouts, etc.



CORRUGATED IRON BUILDING COMPLETE.

FOR CORRUGATED IRON ROOFS we refer to Buildings in the New York Navy Yard, the New Depot of the New Jersey Railroad and Transportation Company at Jersey City, Capitol Extension at Washington, U. S. Custom Houses, etc., in various parts of the UNITED STATES.

The subscribers have constantly on hand and for sale :

Galvanized RAILROAD SPIKES,
Galvanized SHIP SPIKES,
Galvanized SLATING NAILS,
Galvanized LIGHTNING RODS,

Galvanized HOOP IRON,
Galvanized CUT and WROUGHT NAILS,
Galvanized WIRE,
Galvanized SCREWS,

Galvanized SHEATHING NAILS,
Galvanized RIVETS,
Galvanized SHEET IRON, of all Widths
and Gauges.

CORRUGATED SHEET IRON FOR ROOFING.

PLUMBERS AND STEAMFITTERS' BRASS WORK.

SHOT, PIPE AND SHEET LEAD.

Pig Lead, Pig Iron, Sheet Iron, Tin Plates, Spelter, Banca and Straits Tin, Ingot Copper, Braziers' Sheets, and other Metals.

MARSHALL LEFFERTS & BROTHER,

No. 57 Beekman st., NEW YORK.

American Railroad Journal

STEAM NAVIGATION, COMMERCE, FINANCE,
INSURANCE, BANKING, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

ESTABLISHED IN 1831.

PUBLISHED WEEKLY BY J. H. SCHULTZ & CO., AT NO. 9 SPRUCE ST., NEW YORK, AT FIVE DOLLARS PER ANNUM.

SECOND QUARTO SERIES, VOL. XV., No. 12.]

SATURDAY, MARCH 19, 1859.

[WHOLE No. 1,196, VOL. XXXII.]

MESSRS. ALGAR & STREET, No. 11 Clements Lane, Lombard Street, LONDON, are the authorised European Agents for the *Journal*.

PRINCIPAL CONTENTS.

York and Cumberland Railroad of Maine.....	177
New York Canals.....	177
Journal of Railroad Law.....	180
Railroad Earnings.....	183
White Mountain Railroad.....	184
Milwaukee and Mississippi Railroad.....	186, 184
McCallum's Inflexible Truss Bridge.....	184
Winslow's Compound Rail.....	185
Debt of California.....	185
Milwaukee and Chicago Railroad.....	185
East Tennessee and Virginia Railroad.....	185
Iron Bridges on the Central Railroad.....	186
Pittsburg, Fort Wayne and Chicago Railroad.....	187
Reciprocity with the British Provinces.....	188

American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO. NO. 9 SPRUCE ST.

New York, Saturday, March 19, 1859.

York and Cumberland Railroad of Maine.

The line of this road extends from Portland to Great Falls, N. H., a distance of 52 miles, there connecting with the Boston and Maine Railroad. Of this distance, only 18½ miles, from Portland to the Saco river, are completed. The first section, extending from Portland to Gorham, a distance of 10½ miles, was opened February 8th, 1851; and the second section, from Gorham to Saco river, 8 miles, on the 15th of February, 1853.

Up to the first day of January, 1857, there had been expended on the road, (embracing about \$60,000 expended on the western end of the line, in grading,) \$1,090,000, as represented by the following sums:

Stock sold.....	\$370,000
1st Mortgage bonds.....	40,000
2nd Mortgage bonds, J. G. Myers.....	410,000
Judgment in favor of J. G. Myers.....	200,000
Floating debt.....	50,000
Land claims.....	20,000

\$1,090,000

The claim in favor of Myers took priority of the second mortgage, and as the company were unable to pay it, the road was sold on the 30th of April, 1856, for a sum of \$80,000, (subject to the first mortgage,) leaving the stockholders liable,

under the laws of Maine, for the balance of the of the judgment. On the first of January, 1856, however, a compromise was effected between all parties in interest as follows:

A new mortgage was executed upon all the property of the company for the sum of \$950,000, into which the creditors agreed to convert their claims at the following rates:

Land claims at par.....	\$20,000
First mortgage at par.....	40,000
Myers' judgement.....	200,000
Second mort. bds, (\$410,000) at 30 per ct. 123,000	
Floating debt at same rate.....	15,000

\$398,000

Which amount represented the cost under the new management of the finished portion of the road—the stockholders agreeing to cancel their stock in consideration of being released from any further claim upon them.

Of the balance of the bonds, \$553,000 were to be appropriated toward the completion of the unfinished portion of the road, 33½ miles, at the rate of \$15,000 per mile, and \$49,000 toward the purchase of additional equipment.

This agreement has been substantially carried out, so that the finished portion of the road is represented by bonds to the amount above stated. At the same time a contract was made with Myers for the completion of the road to Great Falls, at a cost of \$30,000 per mile—the same to be paid for, one-half in bonds, and one-half in new stock. The work is now progressing under this contract, with a probability of its being completed from Saco river to Alfred, 14 miles. Should the whole road be completed under the new arrangement, its total cost to the then owners of it will be as follows:

Bonds paid for 18½ miles.....	\$398,000
Bonds to be paid for construction.....	503,000
" " " equipment.....	49,000
Stock to be issued.....	503,000

Total for 52 miles of road.....\$1,453,000

—or equal to \$27,770 per mile.

The first mortgage bonds were issued February 8th, 1851, and were payable in 20 years, principal and interest payable in Portland, the latter semi-annually. The second bonds were issued Oct. 15, 1851, and were payable in 20 years—principal and interest payable in Portland, the last semi-annually. The last issue in which the other

two are now merged, was made January 1, 1857, payable in 20 years, principal and interest payable in Portland, the latter semi-annually.

It is anticipated that on the completion of this road to Great Falls, it may be extended to Nashua, to connect with the roads at this point running toward New York, saving something like 30 miles over other routes.

New York Canals.

We have received the report from the Auditor of the Canal Department. It is a document of unusual interest, and we give the major portion of it notwithstanding its great length. There are parts of it to which we shall take occasion to refer:

The receipts from all sources the past year were as follows:

Toll on boats and passengers.....	\$158,478
" products of the forest.....	\$479,576
" animals.....	32,043
" vegetable food.....	1,026,965
" other agricultural products.....	6,912
" manufactures.....	103,398
" merchandise.....	159,439
" other articles.....	143,943

1,952,276

\$2,110,754

The whole amount of tonnage transported on the canals, during the last season of navigation:

Products of the forest.....	1,232,968
Products of animals.....	65,166
Vegetable food.....	1,208,589
Other agricultural products.....	6,136

1,279,891

Manufactures.....	295,903
Merchandise.....	188,441
Other articles.....	667,989

Total.....3,665,192

The value of such tonnage is as follows:

Products of the forest.....	\$8,963,443
Products of animals.....	\$8,795,510
Vegetable food.....	40,064,541
Other agricultural products.....	1,232,287

50,142,318

Manufactures.....	9,352,955
Merchandise.....	61,236,319
Other articles.....	8,873,800

Total.....\$138,568,844

The total number of tons carried one mile, was.....564,842,095

The total movement of the several classes of freight:

Products of the forest	174,576,073
Products of animals	10,697,582
Vegetable food	248,619,507
Other agricultural products	1,086,750

Manufactures	260,403,839
Merchandise	32,111,933
Other articles	40,877,250
	56,873,000

Total

The whole amount of tonnage arrived at tide-water, by way of the Erie Canal, from Western States and Canada, during the last season of navigation, was 1,273,099 tons. The whole amount of tonnage arrived at tide-water, the produce of this State, during the same period, was 223,588 tons. The whole number of barrels of flour arriving at tide-water through the canals during the last season of navigation, was

The whole number of bushels of wheat arriving during the same period was 8,324,966, which, turned into flour, calculating five bushels to the barrel, would make

Total in barrels

The whole number of bushels of corn arriving at tide-water during the same period was 6,660,893. The total number of new boats registered during the last year was 255, with a total tonnage of 27,880, making an average tonnage of 109.

	Tons of each class carried on the canals.	Tons of each class carried on the railroads.
Products of the forest	1,232,968	303,236
Produce of animals	65,166	734,995
Vegetable food	1,208,589	914,206
Other agricultural products	6,136	77,174
Manufactures	295,903	325,596
Merchandise	188,441	562,378
Other articles	667,989	556,140

Total tons carried

The whole number of tons carried one mile on the canals was 564,842,095, and on the railroads, 420,604,609.

The whole railroad investment, including stock, floating and funded debt, was \$149,262,311 81 on the 30th of September last, and this, of course, includes the accommodation for passenger business as well as the freight traffic. The earnings of all the roads on their freight business was \$10,532,714 97, and the cost of operating the roads, or expense of carrying on this traffic was \$6,254,049 16, excluding the city roads, leaving, as the net earnings of the roads, \$4,278,665 82. This sum, divided by the total movement, or number of tons carried one mile, gives an average of 1.017 cents a ton per mile net, while the gross canal receipts for the year, without any deductions for repairs and collections, were only 3.71 mills a ton per mile on the total canal movement.

The above comparative statement shows the tonnage of the railroads was largely in excess of the canals in the "product of animals," "other agricultural products," "manufactures and merchandise," which formerly paid high rates of toll on the canal.

FOREIGN SHIPMENTS AND CANAL MOVEMENTS.

The statements below show the export of breadstuffs from the United States to Great Britain and Ireland, for the years ending on the 1st of September, 1856, '57 and '58, and the receipts at tide-water, on the New York canals, of the same articles, for the years 1855, '56 and '57:

Ending Sept. 1.	Flour, bbls.	Meal, bbls.	Wheat, bushels.	Corn, bushels.
1856	1,665,552	8,721	7,939,955	7,060,821
1857	863,179	686	7,567,001	4,793,134
1858	1,300,906	607	6,656,639	3,372,444

Agg'te. 3,829,637 10,214 22,163,595 15,226,399

Arrived at tide-water by the canals:

	Flour, bbls.	Meal, bbls.	Wheat, bushels.	Corn, bushels.
1855	1,290,149	2,530	5,426,285	9,343,744
1856	1,130,509	13,851	11,776,366	9,587,714
1857	835,546	14,860	5,763,400	5,515,828

Agg'te. 3,255,204 31,241 22,966,051 24,447,286

The tide-water receipts given above include the whole season of navigation of each year, and correspond as to time as near as the published statistical accounts will allow. The object of the comparative table is to show that during the above period the tide-water receipts by the canal alone have been equal, or nearly so, to the foreign exports to Great Britain and Ireland. There is no account of the quantity of flour carried forward by the two railroads.

MOVEMENTS OF TRADE.

The following is a series of comparative statements of the movement of freight on the two railroads connecting New York with Lake Erie, and the State canals, during the last three years, showing the tons carried each year, the total movement, or number of tons moved one mile, and the freight and tolls received therefrom.

	1856.	1857.	1858.
Tons carried by railroad	1,719,327	1,816,857	1,582,371
Do. canal	4,116,082	3,344,061	3,665,192

Agg'te of both

The railroad traffic in 1858 is 136,956 tons less than in 1856, and 234,486 less than in 1857. The commercial crisis of the latter year affected the railroad traffic in the former part of the fiscal year, covered by the report, quite as much, in proportion, as it did the canal traffic during the navigation season of 1857. The gain on the canal tonnage the last year is 321,131, and there is a falling off, compared with 1856, of 550,890. The aggregate falling off on the canal and railroads, compared with 1856, being 587,936 tons.

	1856.	1857.	1858.
Total movement by railroad	329,191,724	312,974,641	308,586,813
Do. canal	592,009,603	484,750,864	564,842,095

Agg. of both

This embraces the total movement on both railroads, and shows a gain in 1858, over 1857, of 75,703,403 tons moved one mile, and a loss of 47,772,419, compared with 1856.

The statement showing tons of total movement for three years, the freight and tolls paid, and the average cost per ton a mile on railroads and canals.

	Tons moved one mile.	Freight and tolls.	Aver. per ton one mile.
1856.			
N. Y. Central	145,733,678	\$4,328,041	2.97 cents.
N. Y. & Erie	183,458,046	4,545,782	2.48
Canals	592,009,603	2,748,212	4.22 mills.

Totals

1857.

N. Y. Central	145,873,791	\$4,559,276	3.13 cents.
N. Y. & Erie	167,100,850	4,097,610	2.45
Canals	484,750,864	2,045,641	4.21 mills.

Totals

1858.

N. Y. Cent'l	142,691,178	\$3,700,270	4.26 cents.
N. Y. & E.	165,895,635	3,843,310	7.23
Canals	564,842,095	2,110,754	0.37 mills.

Totals

The canal averages do not cover the forwarder's charge for transportation, which may be assumed at one cent a ton per mile, although the succeeding tables will show this assumed cost too high by nearly one-half. The gross receipts are only given, so that the net receipts or net earnings do not appear in these statements.

The following table shows the separate tonnage of the canals and two railroads, and the aggregate of both for six years from 1853 to 1858, inclusive,

with the losses and gains of each compared with the preceding year. The table also shows the remarkable fact that the whole tonnage of 1853 and 1858, are about the same:

	New York Canals.	New York Central Railroad.	New York and Erie Railroad.	Total.
1853	\$4,247,853	\$360,000	\$631,039	\$5,238,892
1854	4,165,863	549,804	743,250	5,458,916

Loss

Gain

1854

1855

Loss

Gain

1855

1856

Gain

1856

1857

Loss

Gain

1857

1858

Gain

Loss

This table shows the tolls and freight paid on the tonnage in the preceding table. The tons of property carried in 1853 and 1858, are nearly the same; but it will be noticed that the aggregate cost of transportation was \$2,073,572 more in 1858, owing to the large proportion of tonnage being carried by rail. The losses and gains show a large difference from year to year:

	New York Canals.	New York Central Railroad.	New York and Erie Railroad.	Total.
1853	\$3,204,718	\$1,838,830	\$2,537,214	\$7,580,762
1854	2,773,566	2,479,820	3,369,590	8,622,976

Loss

Gain

1854

1855

Gain

1855

1856

Loss

Gain

1856

1857

Loss

Gain

1857

1858

Gain

Loss

Canal and Central Railroad Compared.

The following statement is compiled for the purpose of showing the freight traffic on the canals of this State, from 1853, inclusive, and the New York Central Railroad, since its consolidation to the present time. These exhibitions of trade on these great central lines afford the most striking illustrations of the tendency of the traffic destined to pass over them:

	Canals. Tons carried.	Tolls received.	Av. per ton cts.
1853	4,247,853	\$2,955,697	69.51
1854	4,165,863	2,547,438	61.15
1855	4,022,617	2,610,420	64.89
1856	4,116,082	2,554,215	62.05
1857	3,344,061	1,897,451	56.91
1858	3,665,192	1,952,276	53.27

New York Central Railroad.

	Tons carried.	Freight received.	Average per ton.
1853.....	360,000	\$1,838,830 00	\$5 10-74
1854.....	549,805	2,479,820 00	4 50-00
1855.....	670,073	3,189,603 00	4 76-00
1856.....	776,112	4,371,389 20	5 67-09
1857.....	838,791	4,559,275 88	5 43-55
1858.....	765,407	3,700,270 44	4 83-46

The above table shows all the tonnage, through and way, of the canal and railroad in the above years, and the gross amount received in each year for tolls on the canals, and for freight on the railroad. The tons carried in 1858 on the road were only 73,384 less than in 1857, and the total mileage in 1858 was only 3,182,594 less than in 1857, while it will be noticed that the loss in receipts on freight was \$859,005 44.

The above figures show another important fact not unworthy of note. The 73,384 tons, at the average of 1858, would, if carried, have paid \$254,682 28, so that the difference in the rates charged and received between the two years, in the aggregate, amounts to \$605,323 16, or very nearly two-thirds the canal tolls at the present rates, if all the road tonnage of 1858 had been carried through both ways. The through freight of all classes carried both ways on the road, during the last year, was 312,408 tons, an increase of 19,531 tons over 1857. The canal tolls on this through tonnage of 1858, at two mill rates, would have been \$440,495 28; on the tonnage of 1857, \$412,956 57. In 1857 the receipts from through freight were.....\$2,518,785 93
In 1858 the receipts were.....2,125,726 85

Loss, compared with 1857. \$393,059 08

Here is a difference which shows the freight rates on the road have been reduced on through traffic, to meet the reduction of tolls in March last on the canals. And if we deduct from the road receipts of the last year the freight on the 19,531 tons, increase over 1857, or give the same through tonnage both years to the road, the difference would be \$516,245 86, instead of the above loss, and more than \$100,000 less than the receipts on the tonnage of 1857.

But we can state the proposition in a more brief and perhaps satisfactory manner.

In 1857 the through ton- nage was..	Receipts.	Average.
292,877	\$2,518,785 93	\$8 60-00
In 1858 do. 312,408	2,125,726 85	6 80-43

Difference—

Gain. 19,031 Loss..\$393,059 08 \$1 79-57

The road carried more freight, through and way, the year ending Sept. 30, 1857, than at any other period since the consolidation, and carried more through freight in 1858 than was ever before carried by it. The average receipts, per ton, on through freight, were in 1858 \$1 79 57 less than in 1857, showing that if this freight had paid \$1 41 per ton tolls to the State, the average would have been thirty-eight and a half cents below that of 1857. The average receipts per ton in 1857 would, upon the through tonnage carried in 1858, have swelled the receipts from this source to \$2,686,608 80, which would have been \$560,981 95 over the actual receipts of the year on this branch of traffic. No pretence can or will be alleged that this reduction in price was rendered necessary to protect the traffic of the road against competition outside of the State, or to prevent the diversion of trade from the State during the season of navigation. It is too well known to be disputed, that the two rail lines in the State for months carried on an active, vigorous and hostile competition between themselves, and this competition, as was intended, reached the canals, and nullified the efforts made last spring, to restore the trade to them by the reduction in the rates of tolls. In this conflict the road lost the \$560,981 95 of freight receipts, which it must pocket, and the State lost about half a million of dollars in the effort to retain the trade. The road has already advanced half way

to meet a reduction to a one mill rate. The increased through tonnage on vegetable food brought eastward was 47,297 tons over 1857, equal to 437,935 barrels of flour. Up to the close of September last, the canal exports of flour at Buffalo had been 446,786 barrels less than the lake imports for the season; and up to the close of October, only 732,428 barrels of flour, out of 1,336,428 lake imports, had been sent forward by the canal. Thus, notwithstanding the reduction in tolls, and a corresponding reduction in canal freight, the road has carried nearly half a million more barrels of flour the last, than the previous year, and the canal has only been enabled to obtain a little over one half of the whole lake imports of flour at Buffalo. While the exterior trade or transit through the State is largely benefited by these reductions and competitions, our own State seems not to have been so highly favored during the past year in regard to freight traffic on the railroad. The averages show the reduction on through freight was \$1 79 57 per ton, while on the way freight it was only 26 19 cents.

We have arrived at the interesting period of our history when we must decide whether the local and class interests of a few shall be consulted and promoted in preference to the well being of the whole community—whether the many shall be taxed for the benefit of the few. The theory of the Constitution of 1846 undoubtedly is, that canal tolls shall be imposed with a view to revenue, and not for the benefit of trade, until the debt pledges of the 7th article have been satisfied. During the first five years of that Constitution, no statesman or high public officer mooted or moved the imposition of rates of toll other than for revenue? The public faith required such action, and justice to the public creditor demanded it; while the people had a constitutional pledge, sanctioned by their own sovereign act, by which they were exonerated from the imposition of equitable taxes to increase the revenues of the sinking funds, so long as the canals then completed and in contemplation of being finished, could be made subservient to that end.

By a recent report of the New York and Erie Railroad, it appears that during the year ending Sept. 30, 1858, the road carried 816,964 tons of through and way freight, and received therefor \$3,843,310 77, giving an average of \$4 70 32 per ton. The average on the New York Central Railroad is 13 14 cents per ton over the New York and Erie Railroad. The line of the latter road, from Piermont to Dunkirk, is 446 miles, and of the former, from Albany to Buffalo, 297 75 miles. According to the mileage accounts given by these roads, the receipts of the New York Central Railroad on freight carried, were two cents and six mills per ton per mile, and the New York and Erie Railroad, two cents and three mills. In 1857, the tonnage and receipts on the canals averaged four mills and a quarter per ton per mile, and in 1858, three mills and three-quarters. During the last fourteen years the carriers' charge on the canal has never reached a cent a ton per mile over tolls. These two last items cover the cost of repairs and expense of transportation. The deductions to be drawn from the foregoing facts appear to the Auditor to be plain and conclusive as to the policy of the State in respect to the rates of toll on the canals.

The State is now without resources except by taxation, and the canals are without revenues adequate to their wants. They have been despoiled of their income by a semblance of legal enactment, and their rightful heritage bestowed upon chartered competitors. It is enough to say, that until this despoliation was consummated, they brought to the treasury more revenue, and were the direct means of promoting a more extended commercial traffic and development than their original projectors ever anticipated, or their warmest advocates ever claimed for them. To what extent those revenues shall be reclaimed, or whether they shall be reclaimed at all, remains with the Legislature to determine. The Auditor has endeavored, by the above statement, and the deductions drawn from them, to show that this re-

clamation can be made without any probable injury to trade or the traffic through this State, and even without any serious inconvenience to any of the parties concerned. In our present condition, and so long as that condition shall last, the burthens of trade and the inconvenience of an inadequate revenue, are thrown upon the tax-paying portion of our people, who have no interest in railroad receipts, nor capital invested in canal, lake and river navigation.

Canal and Railroad Tonnage through this and other States compared.

The following table shows the through and way tonnage in the year 1857, of the canals of this State and of the several railroads named in the statement. These are actual results taken from the reports of the railroad companies and of the Canal Department:

	Through, Tons.	Way, Tons.	Total. Tons.
North'n Ogdens'b...	166,150	71,378	177,528
N. Y. Central R. R.	292,877	545,914	838,791
N. Y. & Erie R. R.	243,621	734,445	978,066
Penn'a Railroad ..	172,073	358,347	530,420
Balt. & Ohio R. R.	167,384	708,855	876,239
	932,105	2,418,939	3,401,044
New York canals...	1,150,977	2,193,084	3,344,061
Totals.....	2,133,082	4,612,023	6,745,105

The way tonnage of the Baltimore and Ohio railroad includes 490,954 tons of coal.

In 1857 there were 193,692 tons less delivered at tide-water by the way of the Erie canal, of the produce of the western States and Canada, than in 1853. There were 637,748 tons of the produce of this State delivered at tide-water by the Erie and Champlain canals in 1853, and in 1857 only 197,201 tons, showing a falling off in four years of 440,547 tons. What direction did this tonnage take to reach tide water? Let us see how this matter stands. For 1853 the aggregate of the through and way freight of the New York railroads was 991,039 tons; we cannot designate how much of this was through or way freight, because the reports of the roads do not show it; but we know that in 1857 the aggregate of the through freight of these two roads was 536,498 tons; of way, 1,280,359 tons—total tons carried, 1,816,857. Hence we see where the 634,239 tons lost by the canals has been diverted to, and how these products have reached tide-water. Comparing 1857 with 1853, the canals have lost 903,792 tons, and the roads have gained 825,818 tons, and the difference in the aggregate of these two periods is 77,974 tons less in 1857. Referring to this statement it will be seen that the through traffic of the two southern roads was only three-fifths of that of the two New York roads in 1857, and that through traffic embraces all the tonnage taken from and to the north-western terminations of the roads on the Ohio river, and nothing more.

Tables Showing the Cost of Transportation on the Canals.

The following table has been prepared to show the cost of transportation for a series of years, on down freight from Buffalo to Albany. It is designed to show the cost of carrying on the canal, 216 pounds, or a barrel of flour. The first seven columns show the cost, including tolls; the eighth shows the average for the year; the ninth the tolls; and the tenth the forwarders' charge, or earnings after paying tolls. The reduction in tolls on flour was twenty cents a barrel in 1834, below 1830; again four cents in 1846; again eight cents in 1851; and again eight cents in 1858. The reduction in tolls on flour since 1830 has been forty cents per barrel, which is more than the cost of carriage, including tolls during the last year. The average for the first fifteen years make the forwarders charge equal to the tolls, and in the next fourteen years, the average of the carrier's charge is a little over the tolls. The averages on the down freight are considerably higher than on the up.

It will only be necessary to invite attention to the marked difference between the average of the first 15 and the last 14 years, embracing the whole period set down in the table. During the first period the forwarder's charge exceeded the tolls, but during the second period the tolls exceed the freight charges or carriage.

When we look at the difference between the tolls of 1846 and even 1850, and 1858, on 100 lbs. of through freight, we shall not be surprised that the canals yield so little revenue as to throw the cost not only of completing the canals upon the people of the State, by way of a direct tax, but even to pay the interest on loans contracted for the enlargement and completion of them. The difference of \$3.39 a ton, which is more than twice the present toll, can have no other effect than to deprive the canals of their revenue.

The following table exhibits the averages on up and down freight, for the last twenty-nine years, in periods of five years, except the last, which is for four years. The reductions from 1850 to 1854, and from 1855 to 1858, present a very remarkable feature in canal transportation:

PERIODS.	Av. charge on up fr't p. 100 lbs., from Albany to Buffalo.		Av. charge on down f. p. bbl., 216 lbs., from Buffalo to Albany.	
	Toll.	Freight.	Toll.	Freight.
From to	Cts.	Cts.	Cts.	Cts.
1830-1834, incl., 5 y.	46	45	91	48
1835-1839, " "	33	58	89	35
1840-1844, " "	33	33	66	35
1845-1849, " "	26	15	41	32
1850-1854, " "	18	11	29	25
1855-1858, " 4 y.	13	10	23	21
The per cent. of reduction from the period ending with 1834 to the period ending with 1849, is	43	66	55	33
The per cent. of reduction from the period ending with 1849 to the period ending with 1858, is	50	33	44	34
The per cent. of reduction from the period ending with 1834 to the period ending with 1858, is	71	77	75	64
(To be continued.)				

Journal of Railroad Law.

THE ESSENTIALS OF A CONTRACT FOR TRANSPORTATION.

Sullivan vs. the Philadelphia & Reading R. R. Co.
On the 7th of July 1854, the plaintiff in this suit, Eugene Sullivan, took passage in the defendant's cars from Philadelphia to Phoenixville. It appears from the evidence adduced upon the trial that, when near Phoenixville, the locomotive struck a cow which was passing across the track and knocked her off, but in her struggles she threw herself under the wheels of the second car, in which plaintiff was seated, overset it, and thus caused the injury which it is alleged he received. At or near where the accident happened, the railroad crossed, on a bridge, a public highway, fifteen feet below the track; and on one side of this highway, a private way raised the bank to a level with the railway, while on the other side a path conducted to the same level, neither side having any fence to protect the railroad from intrusion. The Engineer saw the cow as she was climbing the upper part of the pathway, reversed the engine, gave notice to the brakemen to put down the brakes, and used all the means in his power to stop the train, but had not sufficient time to accomplish his purpose, and the accident we have noticed occurred.

Up freight, per 100 lbs., from Albany to Buffalo.

Year.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Aver. for year.
1830.....	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00
1831.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1832.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1833.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1834.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1835.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1836.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1837.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1838.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1839.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1840.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1841.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1842.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1843.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1844.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Total.....	\$12 92	\$12 47	\$12 06	\$11 69	\$12 03	\$12 21	\$13 06	\$12 34
Av. 15 y's.	86	83	80	78	80	81	87	82

Down freight per bbl., 216 lbs., from Buffalo to Albany.

Year.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Aver. for year.
1830.....	\$1 00	\$0 99	\$0 97	\$0 96	\$0 99	\$1 01	\$1 02	\$0 98
1831.....	1 04	97	91	92	90	97	97	96
1832.....	1 10	97	90	97	90	97	97	96
1833.....	91	82	86	83	85	91	91	88
1834.....	87	78	78	81	80	85	88	83
1835.....	70	65	66	64	64	76	75	68
1836.....	80	78	72	72	76	80	80	77
1837.....	80	80	72	72	76	77	77	77
1838.....	80	80	72	72	76	77	77	77
1839.....	80	80	72	72	76	77	77	77
1840.....	80	80	72	72	76	77	77	77
1841.....	80	80	72	72	76	77	77	77
1842.....	80	80	72	72	76	77	77	77
1843.....	80	80	72	72	76	77	77	77
1844.....	80	80	72	72	76	77	77	77
Total.....	\$12 82	\$11 40	\$11 14	\$10 85	\$11 54	\$11 99	\$13 26	\$11 76
Av. 15 y's.	82	76	74	72	77	80	88	78

The following table shows the cost of transportation on the canals on up freight from Albany to Buffalo, from 1830 to 1858, the average cost for the year, the tolls charged upon 100 lbs. of freight carried, and the average charges of the carrier. These prices are assumed, and understood to cover the whole cost of transit to the shipper.

Year.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Aver. for year.
1830.....	\$1 00	\$0 99	\$0 97	\$0 96	\$0 99	\$1 01	\$1 02	\$0 98
1831.....	1 04	97	91	92	90	97	97	96
1832.....	1 10	97	90	97	90	97	97	96
1833.....	91	82	86	83	85	91	91	88
1834.....	87	78	78	81	80	85	88	83
1835.....	70	65	66	64	64	76	75	68
1836.....	80	78	72	72	76	80	80	77
1837.....	80	80	72	72	76	77	77	77
1838.....	80	80	72	72	76	77	77	77
1839.....	80	80	72	72	76	77	77	77
1840.....	80	80	72	72	76	77	77	77
1841.....	80	80	72	72	76	77	77	77
1842.....	80	80	72	72	76	77	77	77
1843.....	80	80	72	72	76	77	77	77
1844.....	80	80	72	72	76	77	77	77
Total.....	\$12 82	\$11 40	\$11 14	\$10 85	\$11 54	\$11 99	\$13 26	\$11 76
Av. 15 y's.	82	76	74	72	77	80	88	78

It is proper to remark, that the road was in good order, the wheels had been carefully examined during the day, the cars were sound, and the train was running, when the cow was discovered, at the rate of eighteen miles an hour, which was below the usual speed.

Upon the first trial a verdict was found, in accordance with the Judge's instructions, for the defendants, upon the appeal, the following was the opinion of the court, as delivered by

WOODWARD, J.—When a railroad company undertakes the transportation of a passenger for an agreed price, the contract includes many things.

On the part of the passenger his consent is implied to all the Company's reasonable rules and regulations for entering, occupying, and leaving their cars, and if injury befall him by reason of his disregard of regulations which are necessary to the conduct of business, the company are not liable in damages even though the negligence of their servants concurred with his own negligence in causing the mischief. On the part of the company the contract implies that they are provided with a safe and sufficient railroad to the point indicated; that their cars are staunch and road-worthy; that means have been taken beforehand to guard against every apparent danger that may beset the passenger, and that the servants in charge are tried, sober, competent men. When in performing this contract they hurt a passenger, without fault of his, the law raises, *prima facie*, a presumption of negligence, and throws on the company the onus of showing it did not exist. This may be shown, and the legal presumption repelled, by proving that the injury resulted from inevitable accident, or, as it is commonly called, the act of God, or that it was caused by something against which no human foresight and prudence could provide. Whatever these can do for the safety of the passenger, the law requires the transporting company to do. But as presumptions of law are always for the Court to pronounce, so are the repelling circumstances relied on for the jury. The legal presumption, which is only an inference from general experience, remains of force until a countervailing presumption of fact is established; and as this is a conclusion drawn from particular circumstances, it is for the jury to consider these circumstances, and to determine what is the reasonable deductions. Yet the court below not only failed to presume negligence from the fact of injury, but instructed the jury that if they believed the testimony in the cause, there was no negligence on the part of the defendants or its agents. Again even more pointedly, the learned Judge said, "No proof of negligence has been exhibited against the agents and engineer which would authorize me to submit it to the consideration of a jury." This was withdrawing from the jury a case that ought to have been submitted with very different instructions. The plaintiff was in no fault. He had taken his seat within the car, and in all respects had demeaned himself as an orderly passenger. Yet he was injured by the overthrow of the car in which he was seated. Here was a breach of the company's contract, and here was what has several times been said by this court to the evidence of the company's negligence: then if the court thought there was evidence which was calculated to repel this *prima facie* presumption of negligence, they should have submitted it to the

jury. Whether that spot in the road was not so commonly infested with cows as to require a fence or cattle guard of some sort: whether the speed of the cars was not too great for a curve exposed at all times to the incursions of cattle; whether the engineer discovered the cow as soon as he might, and used his best endeavors to avert the collision; in a word, whether the accident was such as no foresight on the part of the company or its servants could have prevented—these were questions, and grave ones too, that ought to have been submitted to the learned Judge, after stating correctly the extreme care and vigilance which the law expects of railroad companies, asks if they are required to provide suitable fences and guards to keep cattle off the road? In answering his question in the negative, the judge seems to have mis-applied the reasoning of Judge Gibson in Skinner's case, (7. Harris 298.) That was an action by the owner of a cow killed on a railroad, to recover her value from the company, and the doctrine laid down was that the owner was a wrong-doer in suffering his cow to wander on a road engaged in transporting passengers, and was rather liable for damages than entitled to recover them. The owner of the cow could not insist that the company should fence their road for the protection of his stock. It was his business to keep his cattle within his own bounds. Now such reasoning between a railroad company and a trespasser commends itself to every man's understanding, because it tends to the security of the passenger. If farmers cannot make companies pay for injured cattle, but they involve themselves in liability by suffering their cattle to run at large, passengers are all the more secure from this kind of obstruction. But when, notwithstanding this strong motive for keeping cattle off the road, a cow is found there and causes an injury to a passenger whom the company have undertaken to carry safely, is it an answer to the passenger suing for damages that the owner of the cow had no right to let her run at large? Grant that she was unlawfully at large, and grant that the owner is bound to indemnify the company for the mischief she caused, yet, as between the company and its passenger, liability is to be measured by the terms of their contract. Having undertaken to carry safely, and holding themselves out to the world as able to do so, they are not to suffer cows to endanger the life of the passenger any more than a defective rail or axle. Whether they maintain an armed police at cross-roads, as is done by similar companies in Europe, or fence, or place cattle guards within the bed of their road, or, by other contrivance, exclude this risk, is for themselves to consider and determine. We do not say they are bound to do one or the other, but if by some means they do not exclude the risk, they are bound to respond in damages when injury occurs. Perhaps the passengers would have remedy against the owner of the cow—it is clear from Skinner's case that the company would—but the passenger has unquestionable remedy against the company. If he be injured by reason of defective machinery, nobody would think of setting up the liability of the mechanic who furnished the bad work, as a defence for the company against the claim of the passenger. Yet it would be a defence exactly analogous to that which satisfied the court in this case. We do not wish to be un-

derstood as laying down a general rule that all railroad companies are bound, independently of legislative enactment, to fence their roads from end to end, but we do insist that they are bound to carry passengers safely, or to compensate them in damages. If a road runs through a farmer's pasture grounds, where his cattle are wont to be, possibly, as between the company and the farmer, the latter may be bound to fence; but, as between the company and the passenger, the company are bound to see that the cattle are fenced out. If cattle are accustomed to wander on unenclosed grounds, through which the road runs, the company are bound to take notice of this fact; and, either by fencing in their track, or by enforcing the owner's obligation to keep his cattle at home, or by moderating the speed of the train, or in some other manner, to secure the safety of the passenger. That is their paramount duty. To enable them to perform it, the law entitles them to clear a track. Neither cows nor men, not even the servants of the company engaged in the company's work, are permitted to obstruct it. And because their right to a clear track is absolute, their duty to carry safely is imperative. If they tolerate obstructions, they must avoid the danger by reduced speed and increased vigilance, or answer for the consequences.

The doctrine in the Skinner's case, designed for the safety of the passenger, was so applied in this case as to compromise it. Herein was manifest error. The case must go back to be tried on the question whether there was any thing in the particular circumstances of the accident to repel the *prima facie* presumption of negligence. It is impossible to regard the accident as inevitable. If cattle were in the habit of coming upon the road at that place, or if there was nothing to prevent them, it was a contingency that the company were bound to anticipate and provide against.

Judgment reversed and a new trial granted.

THE MECHANIC'S, MACHINIST'S AND ENGINEER'S Practical Book of Reference, and Railroad Engineer's Field Book, by Charles Haslett, Civil Engineer, and Charles W. Hackley, Prof. of Mathematics in Columbia College, N. Y. 520 pages, containing 176 diagrams, New York, W. A. Townsend & Co.

The publishers have just laid upon our table a copy of the new edition of this excellent work.—Its success has fully sustained the favorable opinion which we expressed respecting it on the appearance of the first edition, and we cannot do better now than to repeat the notice we then gave:

"The 'Practical Book of Reference' is one of real value. In a volume of convenient size for the pocket, an immense amount of matter has been arranged, that cannot be found in any Cyclopædia—matter of value to all practical men, because the result entirely of the practical man's experience. A part of the work is written by Mr. Haslett, a well known engineer: it is principally devoted to the operations of running in curves; the author has opened a new track for this practice; it will be found of great value in locating side tracks, turnouts, &c. More than all, we are glad to see a truly American book. General engineers testify to the value of the new rules, and we are glad to bear similar testimony. We think this part of the book worth the price of the whole volume."

We are also informed that the work is having a fine sale in England, which speaks well for its practical value.

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Length of Road	Capital paid in.	Debt	Total cost of road & equip't.	Gross Earnings for last official year.	Net Earnings for do.	Dividend for do.	Price of Shares.	NAME OF COMPANY.	Length of Road	Capital paid in.	Debt	Total cost of road & equip't.	Gross Earnings for last official year.	Net Earnings for do.	Dividend for do.	Price of Shares.
Atlantic & St. Lawrence	149	2,494,900	3,482,000	6,923,941	645,752	150,224	6	---	Brunswick and Florida, Ga.	30	161,887	463,648	638,648	In progr.	208,771	9	---
Androscog. & Kennebec	66	457,909	1,835,308	2,210,947	159,513	83,368	---	---	South. Western	143	1,399,100	441,292	2,269,323	365,214	208,771	9	---
Kennebec & Portland	72	1,107,526	1,763,738	2,871,264	213,255	---	---	---	Tennessee and Alabama	30	309,751	626,889	679,906	53,775	29,406	---	---
Port., Saco, & Portsmouth	51	1,396,400	---	1,396,373	263,717	120,909	6	90	Tennessee and Mississippi	64	767,540	611,812	1,161,152	161,001	99,488	---	---
Boston, Concord, & Montreal	93	4,304,038	1,104,586	2,848,977	329,767	174,025	16	16	Memphis and Charleston	287	2,228,177	3,495,288	5,672,470	642,022	334,604	---	---
Cheshire	53	4,050,525	599,813	3,179,687	355,929	113,077	6	50	Mobile and Ohio	305	6,784,829	2,066,459	10,701,428	554,382	278,428	---	---
Concord	36	1,600,000	8,242	1,412,676	317,056	125,664	6	47 1/2	Miss. Central	89	1,575,474	926,796	2,503,098	115,679	---	---	---
Northern, N. H.	82	3,068,400	406,286	3,068,400	365,880	166,996	4	---	Southern (Miss.)	82	1,000,000	1,400,000	2,400,000	284,255	150,789	---	---
Con't & Passumps. Riv.	90	1,000,000	800,000	1,784,146	177,588	73,401	4	---	N. O., Opelousas & G. W.	80	2,800,000	750,000	3,577,526	284,178	127,450	---	---
Rutland & Burlington	117	2,233,376	4,158,765	4,584,008	332,215	41,688	none	---	N. O., Jackson & G. N.	206	4,036,000	1,815,610	7,142,563	139,003	---	---	---
Vermont and Canada	47	1,350,000	---	1,380,695	Leas'd to Vt. Cent.	---	---	---	Vicksburg, Shreveport, & Tex.	21	883,706	108,285	992,051	In progr.	---	---	---
Vermont Central	122	5,000,000	5,276,399	8,402,055	705,838	127,389	---	---	East Tennessee and Ga.	111	1,192,974	1,738,669	2,703,423	237,363	104,992	---	---
Boston and Lowell	28	1,830,000	438,920	2,412,251	435,863	171,332	6	91	East Tennessee and Va.	130	626,075	1,728,664	3,208,138	61,344	39,062	---	---
Boston and Maine	74	4,076,974	---	4,229,281	770,802	305,502	6	99 1/2	Nash. and Chattanooga	159	2,263,905	1,632,993	3,966,703	641,552	219,288	---	---
Boston and Providence	43	8,160,000	239,720	8,394,458	594,176	245,194	6	93	Covington & Lexington	98	1,334,850	3,065,917	4,091,604	426,008	220,906	---	---
Boston and Worcester	44	4,500,000	599,974	4,843,779	1,019,149	388,513	6	94 1/2	Lexington and Frankfort	29	430,055	156,899	658,255	95,807	46,712	---	---
Cape Cod	47	611,690	291,007	1,031,625	122,960	39,899	---	---	Lexington and Danville	13	694,444	71,000	765,500	In progr.	---	---	---
Connecticut River	50	1,691,110	276,772	1,801,244	267,710	65,093	3	69 1/2	Louisville and Frankfort	65	741,099	625,216	1,602,095	245,750	109,069	---	---
Eastern, Mass.	69	2,583,400	2,441,373	6,082,007	616,156	272,479	4	41 1/2	Atlantic & Gt. Western	---	866,939	77,494	613,231	In progr.	---	---	---
Fitchburg	67	3,600,000	100,000	3,872,821	668,974	260,533	6	92 1/2	Bellevue and Ind.	118	1,874,395	1,315,237	2,993,392	348,452	120,886	---	---
N. Bedford and Taunton	21	600,000	---	611,580	168,925	27,827	6	---	Clev., Col., and Cin.	141	4,746,200	90,400	4,752,320	1,149,741	514,740	9	8 1/2
Old Colby and Fall River	77	3,015,100	260,100	3,362,940	883,557	305,140	6	100	Cleveland and Toledo	200	3,333,712	4,225,658	7,193,016	930,282	433,790	---	26 1/2
Vermont and Mass.	69	2,332,641	1,019,148	3,241,975	240,133	52,267	none	13 1/2	Clev. and Mahoning	65	---	---	1,620,953	In progr.	---	---	---
Western, Mass.	186	6,150,000	6,839,050	10,495,050	2,117,882	889,763	8	105 1/2	Clev. and Pittsburgh	133	2,780,744	3,043,992	5,637,468	681,877	309,518	---	8
Worcester and Nashua	46	1,141,000	205,565	1,351,271	216,888	82,720	4	46	Clev., P. & Ashabula	96	3,000,000	1,495,548	4,040,978	1,251,538	581,454	15	---
Providence and Worcester	43	1,610,020	300,000	1,781,483	344,773	155,044	7	87 1/2	Cin., Hamilt'n & Dayton	60	2,155,800	1,626,092	3,130,315	487,421	260,763	---	53
Hartford and N. Haven	72	2,356,000	944,000	3,329,602	709,065	340,835	10	125 1/2	Cin., Wilm. & Zanesv.	131	2,421,176	3,782,046	5,696,210	223,606	30,288	---	---
Hartford, Prov. and Fishkill	122	1,936,246	2,182,692	4,205,966	273,425	112,325	none	---	Columbus and Xenia	55	1,490,450	149,000	1,582,475	403,212	181,688	10	---
Housatonic	74	2,000,000	423,685	2,423,685	318,475	109,344	---	---	Dayton, Xen. & Belpre	63	437,838	422,658	860,496	In progr.	---	---	---
Waugusset	57	1,031,800	524,244	1,580,723	237,416	114,237	---	---	Dayton and Michigan	140	1,076,602	393,011	1,185,828	In progr.	---	---	---
N. York and N. Haven	62	2,930,838	2,323,240	6,258,282	1,157,055	264,569	3	45	Dayton and Western	35	310,000	700,481	1,035,173	125,940	63,283	---	---
N. Haven and N. London	50	738,258	761,462	1,460,318	129,571	61,544	---	---	Eaton and Hamilton	42	499,763	332,669	1,176,163	140,936	50,095	---	---
N. London, W. & Palmer	66	610,700	1,052,000	1,663,250	129,571	61,544	---	---	Little Miami	65	2,981,232	1,268,000	3,925,157	775,442	290,123	10	88
Norwich and Worcester	60	2,122,300	724,183	2,598,671	265,417	44,547	---	31	Sandusky, Dayton & Cin.	171	2,097,090	3,368,000	6,065,090	682,614	---	---	---
Albany Northern	32	439,005	1,625,098	1,840,696	117,710	9,904	---	---	Central Ohio	138	1,627,907	6,226,056	4,496,822	770,092	164,097	---	---
Black River and Utica	100	463,330	317,859	974,323	In progr.	---	---	---	Pittsb., Ft. Wayne & Chicago	423	6,247,040	9,822,550	14,279,704	1,646,359	577,787	---	10
Buffalo, Corn. and N. Y.	147	1,487,874	1,601,183	2,819,096	173,476	68,353	---	---	Pittsb., Mayv. & Cin.	50	371,350	31,000	390,933	In progr.	---	---	---
Buffalo and N. Y. City	97	798,439	2,537,849	3,401,868	288,292	31,896	---	---	Sand'y, Man. & Newk.	127	1,360,000	2,206,357	3,552,357	328,958	164,479	---	---
Buffalo and St. Line	47	1,900,000	1,040,000	2,494,364	679,792	355,763	10	---	Scioto & Hocking Valley	56	403,975	609,050	888,858	In progr.	---	---	---
Canandaigua and Elmira	98	434,111	922,393	1,275,796	174,089	69,306	---	---	Spring, Mt. Vernon & P.	113	1,000,000	950,000	2,194,000	In progr.	---	---	---
Canandaigua & Niagara F's	98	1,315,000	2,279,854	3,495,532	135,433	48,649	---	---	Tol., Wabash & St. Louis	242	2,965,107	7,577,500	10,542,600	Recently opened.	---	---	---
Cayuga & Susquehanna	56	687,000	506,689	1,187,592	1,902,828	683,880	---	---	Un., Log., and Chicago	255	4,196,679	1,006,125	2,080,433	In progr.	---	---	---
Hudson River	95	2,758,466	9,250,302	12,737,896	323,413	56,196	---	31 1/2	Evansville & Crawfordsv.	109	986,061	1,270,872	2,058,713	249,869	124,140	---	7
Long Island	58	3,000,000	647,193	2,556,986	4,523,413	3,041,120	8	10 1/2	Ind. and Cincinnati	68	1,686,809	1,564,584	3,029,939	491,743	245,822	---	---
New York Central	58	24,152,400	14,402,655	30,732,518	7,426,007	1,454,082	---	79 1/2	Indiana Central	66	612,350	1,261,179	1,909,911	368,189	204,655	---	---
New York and Erie	484	11,000,000	23,051,405	34,459,324	1,040,393	324,891	---	11 1/2	Ind., Cle. & Pittsburg	83	836,791	1,071,694	1,826,425	253,19	85,248	---	---
New York and Harlem	138	6,717,100	4,822,498	8,758,205	620,153	138,754	---	12 1/2	Jeffersonville	78	1,014,252	694,000	1,839,576	222,737	94,318	---	---
Northern, N. Y.	118	1,633,022	4,406,874	6,470,714	149,373	78,754	---	1	Madison and Indianapolis	87	1,647,700	1,336,816	2,984,516	260,214	118,628	---	---
Oswego and Syracuse	29	906,130	213,025	752,030	In progr.	---	---	---	New Albany and Salem	288	2,535,121	5,281,848	7,023,494	845,827	371,402	---	---
Potsdam and Watertown	29	497,200	294,189	749,683	211,149	82,600	---	---	Peru and Indianapolis	73	---	858,314	2,000,000	160,000	90,000	---	---
Rensselaer & Saratoga	45	610,000	140,000	890,423	71,909	21,089	---	---	Terre Haute and Ind.	73	1,361,450	250,125	1,585,809	481,272	206,079	10	---
Saratoga and Whitehall	48	600,000	390,000	1,694,544	169,454	22,603	---	---	Chicago and Rock Isl'd	182	5,248,000	1,734,318	6,628,272	1,886,196	850,639	---	59 1/2
Syracuse & Bingham'n.	50	708,369	1,678,304	2,272,777	166,363	55,184	---	---	Chicago, Burl. and Quincy	210	4,631,540	3,852,970	8,042,428	1,605,167	811,767	---	43
Troy and Boston	97	457,830	757,079	1,109,822	440,239	169,037	---	---	Chic., St. Paul & F'd du Lac	178	2,300,000	1,325,000	3,625,000	In progr.	---	---	---
Watertown and Rome	94	1,000,000	700,979	2,200,500	243,393	114,633	---	50	Galena and Chicago	259	6,023,820	3,899,015	9,395,455	2,315,786	1,192,042	8	68 1/2
Belvidere Delaware	94	3,000,000	1,107,200	8,794,096	1,640,787	504,114	12	120	Illinois Central	704	6,556,435	20,315,922	25,437,609	2,293,965	565,972	---	68
Oranien and Amboy	30	3,485,000	1,550,854	1,738,171	117,889	45,642	---	---	Peoria and Ogawka	181	1,569,889	2,200,000	6,400,000	In progr.	---	---	---
Hamden and Atlantic	60	3,485,000	758,844	3,680,017	911,611	534,951	---	---	Ohio & Miss. (W. Div.)	147	1,780,295	3,292,463	4,870,568	Recently opened.	---	---	---
New Jersey	63	2,000,000	3,592,828	5,621,329	682,940	357,193	---	132	Terre Haute, Alt. & St. Louis	208	3,011,150	9,925,927	8,728,764	823,767	247,757	---	---
New Jersey Central	63	1,157,805	340,000	1,684,127	237,765	101,542	---	3 1/2	Detroit and Milwaukee	185	838,000	1,128,964	1,968,969	Recently opened.	---	---	---
Morris and Essex	44	1,557,900	909,046	1,700,000	219,253	62,450	---	---	Mich. Central	282	6,057,340	8,306,639	12,847,233	2,245,758	764,936	8	51
Alleghany Valley	62	1,700,000	1,040,000	3,640,000	156,463	77,92	---	---	Mich. South'n & N. Ind.	475	8,875,400	10,459,613	19,336,084	2,309,497	544,311	---	15
Cataw. Wil. & Erie	62	1,013,900	213,509	1,229,675	815,708	41,139	---	---	Green Bay, Mi. & Ch.	40	1,000,000	780,000	1,780,000	In progr.	---	---	---
Cumberland Valley	170	8,294,772	6,013,551	8,013,761	89,536	63,336	---	43	Milwaukee and Miss.	235	3,440,073	4,610,533</					

Railroad Bonds.

Cincinnati Stock Sales.

By KIRK & CHENVER.

For the week ending March 14, 1859.

BONDS.	Per cent.	and int.
Little Miami, 1st Mort.	68	83
Covington and Lexington, 1st Mortgage	68	66
Do. do. 2d do.	75	45
Do. do. Income	104	10
Ohio & Miss., E. D., Construction	78	90
Cinc., Ham. and Dayton, 1st Mortgage	78	90
Do. do. 2d do.	78	80
Indianap. & Cincinnati, do. do.	78	80

STOCKS.	Per cent.
Cincinnati, Hamilton & Dayton	86
Columbus and Xenia	84
Indianapolis & Cincinnati	89
Little Miami	86
Ohio and Mississippi (E. D.)	3

Railroad Earnings.

The following shows the earnings of the North Pennsylvania railroad during the month of Feb'y, 1859 \$22,588 19
 1858 18,901 51
 Increase \$3,686 68
 In three months ending Feb'y 28, 1859, \$70,720 25
 To same date last year 59,714 45

Increase \$11,005 80
 The earnings of the Norwich and Worcester road continue to show a good increase, which would have been larger but that one of the boats was taken off for repairs. The figures for February were:

	1858.	1859.
Passengers	\$5,140 84	\$5,934 74
Freight	9,218 37	13,768 45
Total	\$14,359 21	\$19,703 19
Increase in 1859		\$5,343 98

 The comparative earnings for seven months past were as annexed:

	1858.	1859.
August	\$30,650	\$31,571
September	32,314	31,837
October	19,835	27,310
November	17,240	27,014
December	15,916	24,092
January	13,540	21,688
February	14,259	19,703

Total \$143,854 \$183,210
 Gain for last seven months, \$39,456 (over 20 per cent.)

The earnings of the Cleveland, Columbus and Cincinnati Railroad for February were as follows:
 By freight trains \$43,846 89
 By passenger trains 23,383 67
 From rents 6,192 86

Total \$72,928 42
 Earnings for February, 1858 68,138 49

Increase \$4,784 93
 The earnings of the Terre Haute, Alton and St. Louis Railroad for the month of February, 1859, were as follows:

Passengers	\$26,376 98
Freight	34,419 74
Mail	1,837 49
Miscellaneous	1,056 26

Total \$63,720 47
 Receipts for February, 1858 52,327 72

Increase in 1859 \$11,392 75

The traffic of the Great Western Railway of Canada, for the week ending 4th of March, 1859, was as follows:

Passengers	\$18,498 13
Freight and live stock	20,290 81
Mails and sundries	1,329 88
Total	\$40,028 82
Corresponding week, 1858	41,829 98

NAMES OF COMPANIES. (The following quotations are at interest.)	Amount of Loan.	Description of Bonds.	Rate Int.	Interest payable.	Where payable.	Due.	Offered.	Asked.
Alabama and Tennessee River	\$838,000	1st mortgage, convertible	7	1st Jan. 1st July	N.Y.	1872	80	70
Buffalo and State Line	500,000	Do. Do. convertible	7	April, October	"	1866	92 1/2	96
Bellefontaine and Indiana	600,000	Do. Do. convertible	7	Jan'y, July	"	1866	76	76
Do. do.	200,000	Real estate, convertible	7	Jan'y, July	"	1865		
Do. do.	200,000	Income, guar. Cl. Col. & Cin.	7	Feb'y, August	"	1859		
Central Ohio	1,250,000	1st mort. conv. east. sec.	7	Divers	"	1861-64	60	70
Do. do.	800,000	Do. Do. convertible	7	March, Sept.	"	1865	41	45
Cincinnati, Hamilton, and Dayton	600,000	1st mortgage, convertible	7	20 Jan. 20 July	"	1867	90	92 1/2
Do. do.	465,000	Do. Do. convertible	7	May, Novemb.	"	1860	79	79 1/2
Cincinnati and Marietta	2,500,000	1st mortgage, conv. till 1862	7	Jan'y, July	"	1868		
Cincinnati, Wilmington, and Zanesville	1,300,000	Do. Do. convertible	7	May, Novemb.	"	1862		
Cleveland, Painesville, and Ashtabula	567,000	Do. Do. convertible	7	Feb'y, August	"	1861		
Do. do.	800,000	Do. Do. convertible	7	Feb'y, August	"	1860	67 1/2	75
Cleveland and Toledo	1,200,000	Do. on Branches	7	March, Sept.	"	1873	60	67
Chicago and Mississippi	825,000	Do. Do. convertible	7	Feb'y, August	"	1863	75	80
Do. do.	800,000	Do. conv. till 1857	7	April, October	"	1862-72	30	50
Covington and Lexington	1,200,000	Do. Do. convertible	7	April, October	"	1862-72	50	60
Do. do.	400,000	Do. Do. convertible	7	April, October	"	1867	60	65
Delaware, Lackawanna, and Western	1,000,000	2d mortgage, convertible	7	March, Sept.	"	1863	47	55
Florida Freeland	1,500,000	1st mortgage, do.	7	April, October	"	1875	89	90
Fort Wayne and Chicago	1,500,000	Do. not convertible	7	March, Sept.	"	1891	77	78
Gaucha and Chicago	2,000,000	Do. conv. till 1863	7	Jan'y, July	"	1873	94	95
Do. do.	2,000,000	Do. Do. convertible	7	Feb'y, August	"	1863	91	92
Great Western (Illinois)	1,000,000	2d mortgage, do.	7	May, Novemb.	"	1875		
Green Bay, Milwaukee, and Chicago	400,000	1st mortgage, do.	10	April, October	"	1868		
Jeffersonville	300,000	Do. Do. convertible	8	10 April, 10 Oct.	"	1863	87 1/2	93
Indiana Central	600,000	Do. 2d sec. conv.	7	April, October	"	1873		
Indianapolis and Bellefontaine	450,000	Do. Do. convertible	7	May, Novemb.	"	1866		
Indianap. & Cin'ti (for Lawb. & U. M.)	500,000	Do. Do. convertible	7	Jan'y, July	"	1860-61	70	80
La Crosse and Milwaukee	950,000	Do. conv. till 1857	7	March, Sept.	"	1866	77	85
Lake Erie, Wabash, and St. Louis	3,400,000	1st mort. 1st sec. conv. till 1864	8	May, Novemb.	"	1874	70	73
Little Miami	1,500,000	1st mortgage, conv. till 1869	7	Feb'y, August	"	1866	83 1/2	84
Michigan Central	1,000,000	Do. Do. convertible	6	2 May, 2 Nov.	Boat.	1863	95	97
Do. do.	600,000	No mortgage, convertible	7	April, October	"	1860	92	93
Milwaukee and Mississippi	600,000	Do. Do. convertible	8	March, Sept.	"	1869		
Do. do.	650,000	1st mort. 1st sec. conv. till 1867	8	Jan'y, July	N.Y.	1862		
Do. do.	1,250,000	Do. 2d do. 1868	8	April, October	"	1863	77 1/2	78
New Albany and Salem	500,000	Do. 3d do. 1860	8	June, Decemb.	"	1877		
Do. do.	2,325,000	Do. 1st section	10	April, October	"	1858-62		
Northern Cross	1,200,000	Do. oth. sec. con. till 1868	8	May, Novemb.	"	1864-75		
Ohio and Indiana	1,000,000	1st mortgage, convertible	8	Jan'y, July	"	1873		
Ohio and Pennsylvania	1,750,000	Do. Do. convertible	7	Feb'y, August	"	1867		
Do. do.	2,000,000	Do. Do. convertible	7	Jan'y, July	"	1866-66	60	70
Pennsylvania (Central)	6,000,000	Income, convertible	7	April, October	"	1872	60	55
Racine and Mississippi	650,000	1st mortgage, conv. till 1860	6	Jan'y, July	Phila.	1860	100 1/2	101 1/2
Scioto and Hocking Valley	800,000	Do. conv. sink'g P'd	8	Feb'y, August	N.Y.	1875		
Stoughtonville and Indiana	1,500,000	Do. 1st sec. conv.	7	May, Novemb.	"	1861		
Terre Haute and Indianapolis	600,000	Do. Do. convertible	7	Jan'y, July	"	1865		
Terre Haute and Alton	1,000,000	Do. Do. convertible	7	March, Sept.	"	1866		
		Do. Do. convertible	7	Feb'y, August	"	1862-77	65	70

NAMES OF COMPANIES. (The following quotations include the accrued interest.)	Amount of Loan.	Description of Bonds.	Rate Int.	Interest payable.	Where payable.	Due.	Offered.	Asked.
Baltimore and Ohio	1,128,500	Mortgage	6	Jan'y, July	Balt.	1875	85	86
Chicago and Rock Island	2,000,000	1st mortgage, conv. till 1858	7	10 Jan. 10 July	N.Y.	1870	94	96
Erie Railroad	4,000,000	2d mortgage	7	May, Novemb.	"	1867	95 1/2	97
Do. do.	4,000,000	2d mortgage, convertible	7	March, Sept.	"	1869	84	85
Do. do.	4,000,000	3d mortgage	7	March, Sept.	"	1883	72 1/2	73 1/2
Do. do.	4,000,000	4th mortgage, not convertible	7	April, October	"	1889	55	56
Do. do.	4,351,000	Not conv. Sink Fund, \$420,000	7	Feb'y, August	"	1875	36	36 1/2
Do. do.	3,500,000	Convertible Inscription	7	Feb'y, August	"	1871	33	35
Hudson River	4,000,000	Convertible	7	Jan'y, July	"	1862	34	40
Do. do.	2,000,000	1st mortgage, Inscription	7	Feb'y, August	"	1869-70	102	102 1/2
Do. do.	3,000,000	2d do. do.	7	16 June, 16 Dec.	"	1860	93 1/2	94
Illinois Central	17,000,000	Mortgage, convertible	7	May, Novemb.	"	1870	74 1/2	75
Do. (Free Land)	3,000,000	Mfg 345,000 acra-priv. 7 abar's	7	April, October	"	1860	91	91 1/2
Michigan Southern	1,000,000	1st mortgage, convertible	7	March, Sept.	"	1860	87	88
New York and Harlem	1,300,000	Do. do.	7	May, Novemb.	"	1861-72	93 1/2	94
New York and New Haven	750,000	No mortgage, do.	7	June, Decemb.	"	1858-60	96	98
New Haven and Hartford	1,000,000	1st mortgage, do.	7	Jan'y, July	"	1875	90	94
Northern Indiana	1,000,000	Do. Do. convertible	7	Feb'y, August	"	1861	83	84
Do. Goshen Branch	1,500,000	Do. Do. convertible	7	Feb'y, August	"	1868	73	74
New York Central	8,287,000	No mortgage, do.	6	May, Novemb.	"	1883	92	92 1/2
Do. do.	3,000,000	1st mortgage, conv. from June 57-59	7	15 June, 15 Dec.	"	1864	102 1/2	102 1/2
Panama, 1st issue	900,000	Convertible till 1855	7	Jan'y, July	"	1866	115	116
Do. 2d do	1,470,000	Do. till 1855	7	Jan'y, July	"	1866	90	91
Reading	3,000,000	Mortgage, convertible	6	Jan'y, July	Phila.	1860	82 1/2	83 1/2
Do. do.	3,469,000	Do. Do. convertible	6	Jan'y, July	"	1870	82 1/2	83 1/2
		Do. Do. convertible	6	April, October	"	1886	73	78 1/2

CITY SECURITIES.	Int't payable.	Off'd	Ask	CITY SECURITIES.	Int't payable.	Off'd	Ask
New York, 5 per ct. 1858-60	98	99		Milwaukee, 7 per ct. coup.	X	Divers	45
Do. 5 do. 1870-75	92	94		New Orleans, 6 per ct. cp. R. R. X	Do.	Do.	72
Do. 6 do. 1858	102	102 1/2		N. Orleans, 6 per ct. cp. municip. X	Jan'y, July	85	90
Do. 6 do. 1890-98	92	94		Philadelphia, 6 per ct. 1876-98	Jan'y, July	99 1/2	99 1/2
Albany, 6 per ct. coup. 1871-81 X	98	101		Pittsburgh, 6 per ct. coup.	X	Divers	46
Alleghany, 6 per ct. coup.	98	101		Quincy, 8 per ct. coup. 1868 X	Jan'y, July	67	75
Baltimore, 6 per ct. 1879-90	99	100		Racine, 7 per ct. coup. 1873 X	10 Feb'y, Aug	80	80
Boston, 6 per ct. coup.	X	100		Rochester, 6 per cent. coup.	X	Divers	90
Brooklyn, 6 per ct. coup. Long X	101 1/2	102		St. Louis, 6 per ct. coup. Long X	Do.	Do.	84
Clev'Pd, 7 per ct. cp. W. W. 1879 X	100	103		Do. Do. Municipal.	X	Do.	86
Cincinnati, 6 per ct. coup.	X	92 1/2		Sacramento, 10 p. ct. cp. 1862-74 X	Do.	Do.	37
Chicago, 6 per ct. coup. 1872-77 X	85	87		S. Francisco, 7 p. cp. 1866, pay. N. Y. X	May, Novemb.	60	70
Do. 7 per ct. coup. 1880	97 1/2	99 1/2		Do. 10 p. ct. cp. 1871 X	Do. do.	89	91
Detroit, 7 per ct. cp. W. W. 1873-78 X	100	102		Do. 10 p. cp. pay. N. Y. X	Jan'y, July		
Dubuque, 6 per ct. cp. Long X	99	101		Do. 6 per ct. pay. N. Y. 1875 X	Do. do.	56	60
Jersey City, 6 per ct. cp. W. W. 1877 X	99	101		Wheeling, 6 per ct. coup.	X	Divers	50
Louisville, 6 per ct. cp. 1880-83 X	71	72 1/2		Do. 6 p. ct. cp. Mun. 1874 X	March, Sept.	80	81 1/2
Memphis, 6 per ct. coup. 1882 X	64	67		Zanesville, 7 do. 1877 X	April, October		

The following is a comparative statement of the earnings of the Pacific railroad for the month of February.

	1859.	1858.
Freight	\$24,700 87	\$12,307 61
Passengers	22,803 85	14,850 80
Mails	2,037 50	1,300 09
Total	\$49,542 32	\$28,458 50
Increase	\$21,083 82	

The revenue of the Baltimore and Ohio Railroad for February was:

Main Stem.	
Passengers	\$42,523 87
Express	6,201 20
Mails	7,833 33
Tonnage	208,396 01
	\$264,954 41

Washington Branch.	
Passengers	\$28,409 31
Express	1,200 00
Mails	1,000 00
Tonnage	5,915 41
	36,524 72

Northwestern Virginia.	
Passengers	\$2,665 92
Express	
Mails	862 75
Tonnage	16,383 80
	19,911 97

Total

Compared with the same month of last year the following result is shown:

	Feb'y, 1859.	Feb'y, 1858.	Inc., 1859.
Main Stem	\$264,954.41	\$227,393.40	\$37,561.01
N. W. Va. ...	19,911.97	16,254.63	3,657.34
Wash. Br. ...	36,524.72	33,396.46	3,128.26

Totals. \$321,391.10 \$277,044.49 \$44,346.61

The financial year of the Company commenced with October. The receipts of the first 5 months of the present year compare with those of the previous year as follows:

	1858-'9.	1857-'8.
October	\$392,503 02	\$396,191 85
November	383,159 22	364,443 38
December	336,861 01	379,259 02
January	327,176 63	317,513 73
February	321,391 10	277,044 49
	\$1,761,090 98	\$1,734,452 47

Increase present year... \$26,638 51

The receipts of the Grand Trunk Railway of Canada for the week ending February

26, were	\$42,274 71
Week ending February 27, 1858	41,939 83

Increase	\$334 87
Total traffic from July 1st.	\$1,480,388 97
Same period last year	1,569,330 15

Decrease

The earnings of the New York Central Railroad in January and February, as compared with the same months last year, were as follows:

	January.	February.	Total 2 mos.
1859	\$382,308 49	\$372,224 53	\$754,533 02
1858	430,375 86	390,430 67	820,806 53

Dec. 1858. \$48,067 37 \$18,206 14 \$66,273 51

The earnings of the Central Railroad Company of New Jersey, for February, were:—

February, 1859.	\$65,809 06
" 1858.	49,625 54

Increase, 32 per cent. \$16,183 52

The earnings of the Buffalo and State Line Railroad for February, 1858 and 1859, were as follows:

	1858.	1859.	Increase.
Passengers	\$21,213 42	\$21,510 71	\$297 29
Freight	38,800 29	44,189 48	5,389 19
Other sources	1,150 00	1,276 75	126 75
Total	\$61,163 71	\$66,976 94	\$5,813 23

The earnings of the New York and Erie Railroad for February were as follows:—

1859	\$301,593 33
1858	378,048 67

Decrease

American Railroad Journal.

Saturday, March 19, 1859.

White Mountain Railroad.

This road was built in 1852 and '53, and opened for business from Bath to Littleton, a distance of 21 miles, in August, 1853. It early became embarrassed, from the inadequacy of its earnings to meet its indebtedness. This consisted of a funded debt of \$180,000, secured by a mortgage on the road, and bills payable, and overdue interest equal, probably, to nearly \$100,000. The amount of stock issued on the first day of May, 1858, was \$106,776 common, and \$33,988 preferred, making the total cost of the road something over \$400,000.

The bonded debt was created March 1, 1853. It had ten years to run. We believe no interest was ever paid on it. The overdue interest on the first of March, 1858, was nearly \$70,000. On the third of this month the road was sold by the bondholders for the sum of \$24,000, subject to some contingent claims, chiefly, if not entirely, for right of way—equal to about \$15,000. In this sale, bondholders, to the amount of \$165,300, were interested. These, under an act of Legislature, passed June, 1857, have organized themselves into a new corporation, under the title of the White Mountain N. H. R. R. Co., with a fixed capital of \$200,000. The new Company took possession of the road on the first day of February last, at which date they executed a lease of the road to the Boston, Concord and Montreal Company, for a term of five years, at a rental of \$10,000 per annum out of the receipts—the lessee to make all necessary repairs, and to return the road in as good condition as when received by it.

The sum of \$200,000 represents the entire cost of the road to the present stockholders, though this is somewhat less than the amount of bonds, with the accrued interest, held by them. All other claims against it have been cut off by the foreclosure.

The Earnings and Expenses for Operating the Road since Its Completion.

Earnings from date of operating to Feb. 1855	\$27,529
Expenses for same period	6,962
Net earnings	\$15,537
Earnings for 1856.	28,164
Expenses	23,000
Net earnings	5,164
Earnings for 1857	21,954
Expenses	20,000
Net earnings	1,954
Earnings for 1858	20,984
Expenses	19,697
Net earnings	1,284

These figures are taken from the reports of the Railroad Commissioners of the State. It is probable that the amount placed to expenses embraced items not properly chargeable to them. The road was in the hands of parties whose interests were hostile to those of the bondholders, nearly up to the day of sale.

It is probable that the earnings of the road may be considerably increased under the management of the B. C. & M. Co., and that the arrangement will be a profitable one for both parties.

Milwaukee and Mississippi Railroad.

We give in another column a full abstract of the late annual report of this Company. Notwithstanding the embarrassments of the Company, the result of the past year's operation is an encouraging one. Under the most adverse circumstances, the Company have earned nearly one million of dollars, which may be taken as conclusive evidence of the strength of the line. With an improvement in the financial condition of the North-West, that of this road must be most marked. It has clearly touched its lowest point. Its embarrassments have risen rather from inadequacy of means provided to carry out the undertakings of the Company, than from mismanagement of the road, which we believe to have been always conducted with ability and integrity. The road has a most excellent line, and a business not only entirely adequate to pay the interest on its indebtedness, but, in time, to pay on the stock.

McCallum's Inflexible Truss Bridge.

We are in receipt of a pamphlet of about 50 octavo pages, by D. C. McCallum, Esq., late Superintendent of the New York and Erie Railroad, explaining and illustrating the general principles of Truss Bridges. This is not designed to be a treatise on the science of Bridge framing, but rather a history of Wooden Bridges—showing the progressive steps by which the present improved and perfected structures have been arrived at. It presents no abstruse calculations or formulae for measuring the extent of the strains to which the different parts of a bridge are subjected, but clearly and briefly explains the nature of these strains. It gives a narrative of facts connected with Mr. McCallum's experience, and describes the experiments made by him with a view to perfecting structures of such great importance in the economical and safe working of our railways. The pamphlet is handsomely illustrated with plans and diagrams, and the subject presented in so clear and popular a manner, that it requires no book learning to understand it.

Mr. McCallum has had peculiar facilities for pursuing and experimenting upon this branch of engineering. During his connection with the N. Y. & E. R. R., permission was given him by the company to institute a series of experiments with models, with a view to perfect a plan of bridge which could be relied upon, and which might be substituted for those then upon the road. Various plans had been tried, but all had been more or less defective. Simple trusses of all kinds had failed from the tension of the lower chord; and combinations of arched beams and trusses for avoiding this difficulty, had proved unsatisfactory from the impossibility of so adjusting them, that each should do its respective duty. Experiments were made upon models built upon a perfect scale, the details being in every respect the same as in a

full-sized bridge, and in all cases the models were loaded to a breaking weight, the load being carefully and equally distributed over the entire length. These experiments were prosecuted to an extent and at an expenditure of time and money unprecedented in the history of bridges, not even excepting the tubular bridge across the Menai straits. Models with every conceivable combination and proportion of materials were made and broken; and as faults of proportion or arrangement were developed, the required changes were made, and new models constructed, until it was believed a framed truss was arrived at, which fulfilled all the requirements of strength and rigidity of which a wooden bridge was capable.

The result was the adoption of the plan now known as the "McCALLUM INFLEXIBLE ARCHED TRUSS BRIDGE."

The principal peculiarities of this plan are an arched upper chord—abutment braces from this chord passing through the lower chord to the masonry, thus relieving the latter from a large portion of its tensile strain, and adjustable counter-braces so arranged that the structure can without load, be subjected, within itself, to a strain far greater than it could ever be subjected to in use; thus rendering it absolutely rigid for the passing of an ordinary train. Mr. McCallum's reasonings are logical and seem to be conclusive upon the point of an adaptation and arrangement of parts which give a strength and rigidity with a given amount of material hitherto unapproached in the art of wood-bridging. At all events, the bridges have now been in use on the New York and Erie Railroad for several years, as well as on the Ohio and Mississippi, and other western roads, and not a single failure has occurred within our knowledge, although they have been subjected to the most severe tests—one of which on the Ohio and Mississippi road is so remarkable that we give the statement as written by the Superintendent of Bridges on that road:—

On the night of March 12th, 1858, an engine attached to a passenger train, was thrown from the track about 300 feet distant from bridge No. 15. The train was running at high speed, and before it could be brought to a stand, the engine had reached the centre of the bridge, with all of its wheels off the rails, and upon it was piled one baggage car and two passenger cars. The concussion broke the lower chords of both trusses of the bridge, together with six posts, twelve braces, and thirty floor beams. The engine, after having passed through the floor timbers, was arrested in its course by coming in contact with the track stringers and lateral rods. The lower chords being broken, the whole train was prevented from plunging into the stream by the sustaining power of the arch and arch braces alone. This proves the truth of what I have frequently heard you assert, that the arch and arch braces alone were of sufficient strength to sustain the whole structure, independent of any aid which might be derived from the tensile strain of the lower chord. I may further say, that when the bridge was in the condition as above stated, in order to raise the engine from its position, a heavy stick of timber was laid upon the arch chords across the bridge, to which blocks and fall and raising apparatus was attached, and although the latter was strained until it gave way, there was not the slightest evidence of failure in arches or arch braces, there being no supports from the bed of the stream whatever.

The certificates of Engineers and Superintendents who have adopted this plan of bridge, show that they are rapidly coming into use. Several have lately been constructed in New England, and

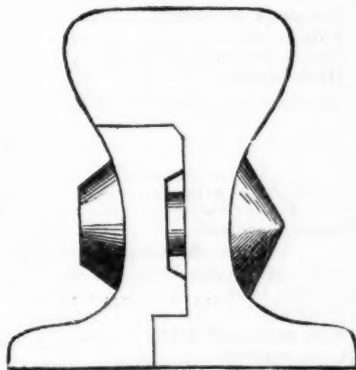
on the Grand Trunk Railway of Canada, where hitherto they have been so wedded to iron. Within the past year one of 17 spans, of 210 feet each, has been constructed across the Susquehanna River, near Harrisburg, for the Northern Central Railroad.

Mr. McCallum's pamphlet is written for gratuitous distribution, and as no subject can be of more interest to railroad managers than the safety of their passengers, and as there is no part of a railroad, upon the perfection of which so much depends for this safety, as the bridges, we commend it to their careful perusal. The advertisement of the McCallum Bridge Co. will be found in our advertising columns.

Upon application at the office of the Co., 110 Broadway, N. Y., either personally or by mail, the pamphlet may be obtained.

Winslow's Compound Rail.

We have previously spoken of a *Compound Rail*, which has been in wear for some time past on the New York Central Railroad, with such satisfaction to the Company, that they are using it exclusively, we believe, in their renewals. The following is a



section view of it. It has been in use a sufficient length of time to test its qualities. We have had opportunities of minutely examining it, and believe it accomplishes the object, upon which so much time and money has been expended,—a joint that thoroughly protects the end of the rail. It can be rolled at a slightly increased expense over the ordinary pattern. Its trial, we think, is well worthy the attention of railroad companies. It is being manufactured by CORNING, WINSLOW & Co., Troy, N. Y.

Debt of California.

The following letter has been received by Messrs. Duncan, Sherman and Co., from the Governor of California:

STATE OF CALIFORNIA, EXECUTIVE DEPT.,
Sacramento, Feb. 19, 1859.

"GENTLEMEN: I regret that in the midst of pressing public engagements your letter of the 29th ult. remains unanswered until the present moment.

"In regard to the indebtedness of the State unprovided for, I have to say that, in my opinion, a vote of the people will be necessary before bonds can be issued.

"It is possible that there are still legal and equitable demands unfunded, to the amount of say \$250,000; and it is understood that a bill will be passed at the present session making provision for payment.

"I do not doubt that this will receive the ratification of the people, as they have already shown that the disgrace of repudiation shall not attach to them.

I am, very respectfully, your obedient,
(Signed) JOHN R. WELLER."

Milwaukee and Chicago Railroad.

The earnings of this road for the year ending Dec. 31, 1858, were as follows:

From passengers.....	\$105,599 50
" freight.....	39,455 68
" express and extra baggage.....	3,010 42
" mails.....	3,498 16
" miscellaneous.....	2,444 56
" steamer Traveller.....	1,447 86
	\$159,456 18

PASSENGER TRAFFIC.

No. through passengers, 1st class.....	71,023
No. " " 2d ".....	11,262
No. " " emigrant.....	8,188

Total number of through passengers on this road..... 90,475

No. way passengers, 1st class.....	85,566
No. " " 2d class and emigrant.....	396

Total No. of way passengers on the road.. 86,062

Total number of passengers transported.. 176,537

No. of miles traveled by passengers, or number of passengers carried in cars one mile..... 5,063,292

Passengers forwarded from Milwaukee..... 55,695

Passengers landed at Milwaukee.. 73,271

It is a noticeable feature that the number of passengers landed in Milwaukee exceeds the number taken from Milwaukee, by 17,576, showing that this road forms one of the main arteries immigration to Wisconsin.

At the recent annual election the following officers were elected, who operate the road under the mortgagees, Bishop & Co., in possession:

C. B. HALL, *President*, Milwaukee.
JOHN V. AYER, *Vice-President*, Kenosha.
A. V. H. CARPENTER, *Secretary*, Milwaukee.
C. P. LELAND, *Treasurer*, Milwaukee.
C. E. SCOFIELD, *Ass't Treas.*, pro tem., N. Y.
C. B. HALL, J. T. MOODY, S. B. SCOTT, *Executive Committee*.

East Tennessee and Virginia Railroad.

This road is 138.28 miles in length, extending from Knoxville, Tenn., via New Market Russellville, and Jonesboro' to Bristol, on the Virginia State line, at which point it connects with the Virginia and Tennessee Railroad, running thence to Lynchburg. The width of the track is 5 feet.

The Ninth Annual report of the President and other Officers of this Company, bearing date November 25th, 1858, has just been received.—The earnings from transportation for twelve months ending November 1st, were—

From passengers.....	\$106,499 98
" freight.....	64,956 14
" mail.....	19,742 24

\$191,198 36

And the expenses attending the same 95,967 21

Leaving as net earnings \$ 95,231 15

A large amount of the expense account is properly chargeable to construction, for the use of engines, cars and men, in hauling cross-ties and iron to lay track between Limestone and Bulls' Gap.

At the date of the previous report, 48 miles of the eastern end of the road, extending from Bristol to Limestone; and 50 miles of the western end, extending from Knoxville to Bulls' Gap, were in operation, upon which were disconnected trains, doing a partial business, leaving 31 miles, much of the grading of which was already completed,

though a considerable amount of heavy work remained to be done, to close up the gap. In its incomplete condition, its net earnings would have been insufficient to meet the interest on the funded debt alone, much less have yielded any revenue to relieve the floating debt. It was therefore believed that if by any possible means it could be completed, it would be to the interest of the company to press the works through, notwithstanding the heavy sacrifices necessary to effect this object. After obtaining all the means that could be procured upon loan—upon the personal responsibility of members of the board—together with their own credits; the contractors with uncommon energy and perseverance, finished the work. Much of this debt to contractors still remains unpaid. The earnings of the road, the only resource of the company, were constantly applied to debts and interest; but this was quite inadequate to meet the debts promptly;—\$630,000, including stock bonds, embraces the actual stock yet returned; and but \$400,000 of this sum consists of private and county subscriptions. The remainder of the work has been done on credit through State loan and county bonds. The interest upon the debts, already amounted to \$250,000; and not less than \$25,000 additional had been paid, or was due, upon stock bonds upon which the company had pledged interest until the completion of the road; after which time they ceased to bear interest, thus making the sum of \$275,000 paid for interest. The whole cost of building and equipment, including rolling stock, depots, etc., has been \$2,800,000—deducting from this the interest paid, leaves \$2,525,000 as the actual cost of the road—or \$19,423 per mile. The revenues of the past two years had contributed about \$50,000 to the above sum. The floating debt to July 1, 1858, was about \$350,000; to meet which the company have on hand about \$175,000 of second mortgage bonds. Such as are already pledged, are redeemable in one or two years. The amount so pledged is \$125,000, which the company expect to redeem. Besides which there are due to the company \$30,000 in uncollected stock and bills receivable. These, together with the income from the road, constitute the only means of reliance for the payment of the debts, and meeting the interest and sinking fund, of two per cent. per annum.

The road was completed through on the 14th of May last, and the regular through trains commenced their trip on the 17th.

The earnings of the last five months after the completion of the road, viz: from June 1, to Nov. 1, were \$126,367 48, or more than double the amount of business for the seven months preceding. At this ratio on the completed road, the earnings for the whole year would have exceeded \$300,000. The estimate of the gross receipts for the current year are \$340,000. This would provide the interest, \$114,000, and leave about \$61,000 to meet the floating debt.

The equipment of the road consists of 10 locomotives; 6 first class and 3 second class passenger cars; 4 baggage and 55 freight cars.

The opening of the above road marks an important event in the railroad history of the country. It nearly completes a great central line of railroad traversing the United States from southwest to northeast—from New Orleans to the eastern portion of Maine—2,000 miles long. Only one

short link is wanting—the Mississippi Central road—which will be completed early in the Fall. With the whole line in operation, every portion of it must have a large and profitable business. The construction of that portion of the line from Lynchburg to New Orleans reflects great credit upon all parties to it, as it has been carried forward with great steadiness of purpose, and often without adequate means—and in all cases without any great disaster. There is no portion of the line to which these remarks will apply with greater force than to the East Tennessee and Virginia road.—This work has progressed, steadily, through a period of seven years—under the management of the same parties, who have well earned and secured the confidence of the people on its line.

The following is a condensed statement of the receipts and expenditures of the company from its organization to June 30, 1858:

	DR.	
Capital stock	\$629,800 00	
Bonds of the State of Tennessee	1,602,000 00	
Bonds of the company endorsed by the State	200,000 00	
First work after and subject to the States' liens	100,000 00	
Bonds redeemable in stock	66,950 00	
Exchange account	29,632 56	
Bills payable	159,448 82	
Due contractors and others	232,963 42	
Miscellaneous	15,557 32	
Net earnings to June 30, 1858	73,816 21	
	<hr/>	
	\$3,110,168 33	
	CR.	
Construction	\$1,012,639 45	
Iron, Equipment, depot, etc.,	1,398,602 19	
Interest account	140,912 90	
“ of iron & equipment fund	108,263 28	
Due from stockholders and others	239,069 82	
Sinking fund	6,000 00	
Profit and loss	68,228 15	
First mortgage bonds	3,500 00	
County bonds	3,000 00	
Engineering, Salaries, etc.,	100,124 87	
Real and personal estate	5,677 93	
Land damages	22,153 68	
Insurance, etc.,	1,129 59	
Cash	839 47	
	<hr/>	
	\$3,110,168 33	

OFFICERS.

President—S. B. CUNNINGHAM.
Secretary and Treasurer—JOHN KEYES.
Chief Engineer—C. A. MEE.
Superintendent—M. S. TEMPLE.

Iron Bridges on the Central Railroad.

Following the example of the Grand Trunk Railway of Canada, the Baltimore and Ohio, and other important roads, the New York Central Company are about to construct their more important bridges of iron, whenever their renewal becomes necessary. A beginning has been made with the long bridge, over the Mohawk river, at Schenectady, which has already been twice renewed in wood, and is now being permanently built of wrought iron. The river at this point is about 730 feet wide, which distance is divided by stone piers into ten bays or spans of about 68 feet each. The form of truss or girder adopted is, in general principle, similar to that known as the Fairbairn Tabular girder in the construction of which no material is used but their rolled plates riveted together as in boiler work, with this difference, that in the Fairbairn girder the upper and lower member or chords are connected by solid sides, while in the Schenectady bridge, a double system of triangular bracing is introduced, to serve the same purpose, in which the diagonal pieces which are of T iron bear the thrust, and the vertical pieces which are of flat plates sustain tensile strain, thus securing an equal amount of strength with a much smaller weight of

material. The roadway, which is designed for a double track, rests upon three trusses, the centre of which weighs about 16 tons; each of the outer trusses weighing about nine tons; their depth is seven feet. On Saturday last the bridge was tested, previous to its being opened for traffic; 21 tons of iron were laid upon the floor of one of the spans over which latter a train 66 feet in length and weighing 77 tons was moved at a speed of 15 miles per hour. Under this load of 98 tons the outer truss deflected not quite half an inch, and the centre truss one quarter of an inch, both trusses resuming their original form immediately on the removal of the load.

The bridge which is remarkable for its light and elegant appearance and will well repay a visit, was designed by Mr. Howard Carroll, one of the Assistant Engineers of the road, and was erected by him for the company under the supervision of Mr. George E. Gray, the efficient Chief Engineer.—*Albany Argus.*

Messrs. Corning, Winslow & Co., of the Albany Iron Works, are now prepared to furnish the materials for bridges of the above description.

Milwaukee and Mississippi Railroad.

The amount received from operations of this road for the fiscal year ending December 31, 1858, as stated in the 10th annual report of the directors, were:

From freight eastward	\$340,300 76
“ “ westward	175,644 65
“ through passengers	110,408 26
“ way “	195,397 67
“ express companies	18,419 50
“ Milwaukee & Watertown R. R. ..	21,496 90
“ mails, rents and storage	21,518 28
	<hr/>
	\$883,186 02
The operating expenses for same time were:	
Fuel	\$82,254 97
Repairs of road	76,346 05
“ locomotives	30,849 24
“ cars	30,376 17
Enginemen and firemen	30,559 72
Train service	27,969 49
Oil and waste	14,775 25
Station service, including salary of Superintendent ..	87,008 98
Salaries and expenses of directors and officers ..	16,936 77
Miscellaneous	46,165 85
	<hr/>
	443,242 49
Net earnings	\$439,943 53

To which add amounts received from other sources, viz:

Sale of bonds	290,320 00
Sale of iron, etc., and from miscellaneous sources, including \$121,337 76, due from other companies Dec. 31, 1857, and from sale of tickets over other roads, now refunded ..	166,878 52
On capital stock in cash and otherwise	22,542 05
	<hr/>
	\$919,638 10

From which deduct—

Interest on 1st mort. b'ds, \$229,480 00	
“ 2nd “ “ 60,000 00	
“ 3rd “ “ 1,600 00	
“ city “ “ 44,400 00	
“ other indebtedness	151,841 96
Construction account	277,445 18
Sinking funds of 1858	53,500 00
	<hr/>
	818,267 14
	<hr/>
	\$101,425 96

The interest and expenses represented above have not all been paid, but have been charged to the appropriate accounts, and the liability for the unpaid amount is embraced in the following statement of indebtedness:

First mortgage bonds on different portions of the road	\$2,850,000 00
Second mortgage bonds	600,000 00
Third " "	149,000 00
Loan of Milwaukee city secured by a second mortgage on Southern Wisconsin line	300,000 00
Increased indebtedness—including \$448,000 construction bonds, and credits to farm mortgagors	818,584 64
Unpaid sinking funds, coupons, etc..	92,268 00

\$4,809,852 64

The amount due the corporation on bills, accounts, etc., is	\$61,141 56
Operating materials on hand	104,814 34
Sinking funds in Trustees' hands	174,543 20
Due from income account of 1859	12,137 50
In hands of Treasurer	17,532 49

\$362,409 29

The whole cost of the road is as follows:

Grading	\$1,468,856 83
Superstructure, including iron, ties, laying of track, etc.	2,168,543 79
Bridging	426,419 10
Right of way and fencing	220,642 65
Real estate, including cost of depot grounds	286,775 58
Depot buildings	288,621 49
Discount on bonds	890,069 48
Loss on stock hypothecated	547,592 24
Interest	402,503 51
Loan expenses and commissions, and losses in negotiations	94,660 19
Engineering	98,180 03
Shop tools and fixtures	23,521 37
Salaries and expenses of directors and officers	67,070 71
Original cost of Southern Wisconsin railroad, and other purposes	124,569 33

\$7,108,026 30

Equipment	1,006,100 13
-----------------	--------------

\$8,114,126 43

The amount of stock actually subscribed is 38,555 shares	\$3,855,600 00
Upon which there has been paid ..	3,696,693 08

Leaving unpaid	\$158,906 92
----------------------	--------------

The company have in operation 234.41 miles of single track road, and 28.28 miles of sidings; total 262.69 miles.

In March, 1858, an estimate was made of the floating debt, and not having any available means to pay it other than the earnings of the road, and believing that in the state of credit that then prevailed with reference to railroads, it would be useless to appeal to the stockholders for aid, the Board on the 15th of that month, executed a mortgage on all its road, to secure four classes of bonds to be issued under it, amounting to \$1,800,000.

The first issue of bonds, in amount five hundred thousand dollars, bearing eight per cent. annual interest payable in four years from surplus earnings, was appropriated to the payment of the floating debt, and the other classes are intended to provide for the bonds of the company hereafter to become due. Of the first class of bonds, to wit: the \$500,000 issued to pay the floating debt, \$150,000 have been canceled by the payment of that amount of the floating debt, and \$149,000 more have been issued in funding the floating debt, which remain unpaid and uncanceled. The balance of that class, to wit, \$201,000, are still to be applied in funding the floating debt, and the other classes provided for in said mortgage have not been issued.

There is no large amount of judgments now unsettled and outstanding against the company. The total amount is less than \$30,000, and is included in the list of bills payable in the items composing the floating debt, with the exception of the costs accrued in obtaining said judgments.

The sinking fund for the year ending December 31st last, has not been deposited, but will be as soon as the earnings are sufficient to meet it.

The floating debt on the 31st December was found to be \$462,842 64, consisting of the following items, to wit:

Unpaid interest dividend	\$182 55
Dividend certificates	133 35
Warrants outstanding	2,419 91
Scrip payable in freight	1,094 00
Dividend certificates	973 38
Unpaid dividends	1,967 79
Bills payable	114,764 57
Due the operatives and for operating expenses	92,404 03
3d mortgage bond certificates	2,284 00
Unpaid sinking fund of 1858	53,500 60
Unpaid coupons on farm mortgage income bonds, etc.	67,714 50
Credited farm mortgagors	125,414 58

\$462,852 64

The amount of \$125,414 58, credited to the mortgagors, is not due, but is a credit to be adjusted when the farm mortgages become due and are paid. Deducting this item, and the floating debt proper is \$337,427 56. The funded debt has been increased during the year by the issue of third mortgage bonds yet outstanding and uncanceled \$149,000 as before stated.

The sum of \$288,097 72 has been charged to construction account during the year.

The road-bed has been improved by new ties, iron, and bridges. Two of the bridges across the Wisconsin river were found to be too low to admit of the passage of boats and rafts in high water, and they have been raised three feet. Much of the track down the valley of the Wisconsin was covered with water during a freshet in June last, and a portion has been raised and the balance is to be completed in the spring. A large amount of ballasting has been done on the Southern Wisconsin line which is not yet fully completed. The road-bed has been much improved from what it was one year ago, but is not yet in perfect repair. The rolling stock and machinery are in good repair.

A large warehouse has been erected at Milwaukee on the grounds of the company, capable of discharging with great ease and dispatch, all the grain and other business of the road, arriving at that point. The depot grounds about the warehouse have been much improved by ballasting, docking, new side tracks, and by dredging the Menominee river in front of the warehouse, all of which were necessary. The facilities now possessed for receiving and shipping goods at Milwaukee without for cartage or dockage, are unsurpassed by any road at the West.

The average length of road operated in 1857 was 200 miles, the expenses of that year \$412,200 10 or \$2,061 per mile. The length of road operated in 1858 is 234 miles, expenses \$443,241 39, or \$1,894 per mile.

The revenue of 1857 was \$4,417 per mile; the revenue of 1858, \$3,700 per mile. It would have increased the expenses of 1858 comparatively but little to have earned \$4,417 per mile, while it

would have added \$150,000 to the revenue. As an illustration, the earnings for May were \$87,737 82, and for June, \$108,699 56, while the expenses for those months differed but \$2,000.

The company require at least 1,000 tons of rails' 60 tons of chairs and spikes, and 40,000 ties during the coming year, besides the rebuilding of one truss bridge of 110 feet span, and 10 bridges of about 45 feet span. The cost of this work will be as follows:

1,000 tons rails (re-rolled) ...	\$30,000
60 tons chairs and spikes ..	4,800
30,000 ties	25c. 7,500
10,000 ties	40c. 4,000
New bridges	6,000
	\$52,300

The number of rails taken up and repaired since March 1st, is 4,711, at a cost for labor besides taking up and putting down, of \$1,956 04, or 41.52 cents per rail. Material used \$1,313, or 30 cents per rail. The whole cost, including taking up, welding and re-laying, is about \$1 per rail.

The company have 43 locomotives; 31 first class passenger cars; 2 second class passenger cars; 13 baggage and post office cars; 411 covered freight cars; 107 platform freight cars; 40 gravel cars; 25 small ditching cars; 37 hand cars.

CONDENSED BALANCE SHEET.

Milwaukee and Mississippi R. R. Co., in General Account, December 31st, 1858.

Dr.

Capital stock	\$3,696,693 08
---------------------	----------------

Bond account, outstanding bonds, as follows, to wit:

10 per cent. R. M., 1st sect.	\$74,000
8 " " 1st sect.	526,000
8 " " 2nd "	650,000
8 " " & sinking Fd, 1,250,000 ..	600,000
10 " second mortg.	S. F. on S. W. line ... 350,000
8 " construction ..	448,000
8 " third mortgage ..	149,000

4,047,000 00

City of Milwaukee Loan of Bonds ..	300,000 00
------------------------------------	------------

Floating debt, as above	462,852 64
-------------------------------	------------

\$8,506,545 72

Cr.

Construction—Main line	\$6,108,399 75
Southern Wisconsin Line, including Janesville Branch	999,626 55
Equipments for both lines	1,006,100 13

\$8,114,126 43

Operating materials	104,814 34
Debts and bills receivable	61,141 56
Farm mortgages and stocks	22,250 00
Trustee of Sinking Fund	174,543 20
Income account	12,137 70
Treasurer	17,532 49

\$8,506,545 72

OFFICERS.

JOHN CATLIN, *President.*
H. CROCKER, *Vice President.*
WM. JERVIS, *Superintendent.*
WM. TAINOR, *Secretary.*
CHAS. H. WILLIAMS, *Treasurer.*
A. G. MILLER, Jr., *Auditor.*

Pittsburg, Fort Wayne & Chicago R. R.

A Circular over the signature of J. EDGAR THOMSON Esq., President, has just been issued in relation to the present and prospective value of the stock and securities of this Company; copies may be had on application at the Agency, No. 44 Exchange place, M. K. JESUP & Co.

Reciprocity with the British Provinces.

The Portland Board of Trade have sent a memorial to Congress on this subject, from which we make the following extracts:

The great value of the reciprocity treaty of 1854 is shown by the rapid increase of our colonial trade, and the large balance in favor of the United States. By it a right to the fisheries was granted, and a free interchange was allowed of the products of the sea, the forests, the mine and the farm, between the United States and all British North America. The effect of this arrangement is shown in the increase of the trade of the two countries.

We give below a table showing the imports and exports between the United States and British North American Colonies in 1827, in 1849, and since 1852.

The following table shows the trade between the United States and British North America:

	Imports.	Exports.	Total.	Excess of exports.
1827..	\$145,000	\$2,704,014	\$3,149,014	\$2,269,014
1849..	2,826,880	5,982,106	6,758,986	3,105,226
1852..	6,110,299	10,569,016	16,519,305	4,398,717
1853..	7,550,604	13,140,642	20,691,246	5,590,038
1854..	8,927,560	24,566,860	33,494,320	15,639,300
1855..	15,136,734	27,866,020	42,948,754	12,669,286
1856..	21,310,421	29,029,349	50,339,870	7,718,929
1857..	22,124,296	24,262,482	46,386,778	2,138,186
1858..	15,806,510	23,651,727	39,458,246	7,845,208

JOURNAL

OF THE

American Geographical and Statistical SOCIETY.

The Second Number of this Journal is now ready.

The American Geographical and Statistical Society have commenced the publication of a monthly JOURNAL of 32 pages, the principal object of which is to furnish information on the important subjects to which the Society is devoted: such as the physical features and meteorological phenomena of our own continent, as well as other countries; our internal and foreign commerce; geography, population, and general statistics of various countries.

In the absence, in our own country, of Governmental Bureaus special devoted to these subjects, it is believed that a work of the character of that now undertaken by this Society is indispensable to their proper elucidation and publication.

The Editorial duties of the JOURNAL are performed by a Committee of the Council, whose labors are gratuitous.

The principal contents of the first number are as follows:—

I.	II.
Proceedings of the Society.	Proceedings of the Society.
Northwest America.	Geography of the Western
Paraguay.	Portion of North America.
Geography of the United States	Colorado Expedition.
Mountains of North Carolina.	Geography of the United States
Meteorology of the Proposed	No. 2.
Territories.	American Agriculture.
India: Its Extent and Population.	Manufactures in the United States.
Republic of Ecuador.	Republic of Chile.
Miscellaneous Statistics.	Census of Oregon, 1858.
Education in Upper Canada.	Census of Louisiana, 1858.
Population of British Australia.	Granadan Confederation.
Meteorological Reports.	Notices of Books.
Notices of Books.	

Subscription Price, \$3.00 per year, or 25 cents per copy.

ISSUED FREE TO MEMBERS OF THE SOCIETY.

The Rooms of the Society are in Clinton Hall, Astor Place, where all communications must be addressed.

Letters relating to the business of the JOURNAL are to be addressed to the Publishers

JOHN H. SCHULTZ & CO.,
9 Spruce st.,
NEW YORK.

RAILROAD MAP

OF THE UNITED STATES AND CANADA.
Price, Mounted, \$3.00.—In Pocket form, \$1.00.
FOR SALE AT THIS OFFICE.

OFFICE OF THE ILLINOIS CENTRAL R.R. CO.,
New York Feb'y 15, 1859.

THE Annual Meeting of the stockholders of the ILLINOIS CENTRAL RAILROAD COMPANY, for the election of Directors and the transaction of any other business, will be held at the office of the Company, in the City of Chicago, on WEDNESDAY, the 16th March, 1859, at 10 o'clock A. M. The Transfer Books will be closed on the 10th of March, and re-opened on the 15th.

W. K. ACKERMAN, Secretary.

**NEW EDITION—NOW READY—
OF THE
MECHANIC'S, MACHINIST'S, AND ENGINEER'S
PRACTICAL BOOK OF REFERENCE,**

AND

RAILROAD ENGINEER'S FIELD BOOK,

Containing Tables and Formulas for use in superficial and solid Mensuration; strength and weight of materials; Mechanics; Machinery; Hydraulics; Hydrodynamics; Marine Engines; Chemistry and Miscellaneous Recipes, together with Methods of running and changing lines, locating side tracks and switches; Tables of Radii and their Logarithms, Natural and Logarithmic Versed Sines and External Secants; Natural Sines and Tangents to every degree and Minute of the Quadrant, and Logarithms of Natural Numbers from 1 to 10,000. By CHARLES HASLETT, Civil Engineer, and CHARLES W. HADLEY, Professor Mathematics in Columbia College, New York; 520 pages containing 176 Diagrams. Price, bound in Morocco, gilt edges, pocket book form with tucks, \$2.50; plain Morocco, flexible, \$1.75. Mailed free of postage on receipt of price.

Agents wanted to sell the above work Apply to
W. A. TOWNSEND & CO. Publishers,
2112 No. 46 Walker st., New York.

IMPORTANT TRUST SALE.**SALE OF THE
SAN ANTONIO AND MEXICAN GULF
RAILROAD.**

By virtue of a Deed in Trust, made and executed the thirtieth day of September A. D. 1857, by the San Antonio and Mexican Gulf Railroad Company, of the State of Texas, conveying to the under-signed as Trustees, the property and rights hereinafter described, to secure the payment of certain notes, in said Deed set forth, (amounting with interest, to about \$60,000), which notes have become due and remain unpaid—we shall, on the first Monday in April next, being the 4th day of said month, between the hours of 10 A. M. and 4 P. M. at the Railroad Depot, in the town of Lavaca in the State of Texas, proceed to sell, at public vendue, to the highest bidder, for cash, "All the iron rails, chairs, spikes, turn tables, loco motives, cars, road-bed, ties, and all other material pertaining to, or in any manner designed for the construction of the San Antonio and Mexican Gulf Railroad, now constructed or delivered, whether the same be laid down or not."

JOHN JAMES,
JOHN C. FRENCH, Trustees.

SAN ANTONIO, Texas, Feb. 1st, 1859.

The Trustees, for the information of purchasers, refer to the subjoined statement, furnished by the President and Directors, of the Franchise, Property, etc., of said road:

The rights and privileges of the purchaser or purchasers at this sale, are defined by an act of the Legislature of the State of Texas approved December 19th, 1857, entitled "An act supplementary to and amendatory of an act to regulate Railroad Companies, approved February 7, 1853."

Sec. 5. The road-bed, track, franchise and chartered rights and privileges of any railroad company in this State, shall be subject to the payment of the debts and legal liabilities of said company, and may be sold in satisfaction of the same; but the said road-bed, track, franchise and chartered powers and privileges shall be deemed one entire thing and sold as such; and in case of the sale of the same, whether by virtue of an execution, order of sale, deed of trust, or any other power, the purchaser or purchasers at such sale, and their associates, shall be entitled to have and exercise all the powers, privileges, and franchises granted to said company by its charter, or by virtue of the general laws of this State; and the said purchaser or purchasers and their associates, shall be deemed and taken to be, the true owners of said charter, and corporators under the same, and vested with all the powers, rights, privileges and benefits thereof, in the same manner and to the same extent, as if they were the original corporators of said company; and shall have power to construct, complete, and work the road upon the terms, and under the same conditions and restrictions as are imposed by their charter and the general laws of the State.

DESCRIPTION OF THE PROPERTY.—A section of five miles and 1,034 feet complete: ready for and in actual use; twenty miles of the grading examined and approved by the State Engineer, and five miles of additional grading nearly completed; one twenty ton locomotive in good running order; and eight platform freight cars, and one hand car. About 10,000 cross-ties of the best quality, not laid down upon the road. One new turn-table which has not been put up.

The FRANCHISE is regarded as very valuable, the charters granted to this company being among the most favorable of those granted to any Railroad Company by the Legislature of the State of Texas.

The original charter is dated September 5th, 1850, and invests said company "with the rights of locating, constructing, owning and maintaining a Railway, commencing at any suitable point on the Gulf between Galveston and Corpus Christi, and thence running by such course and to such point near the City of San Antonio, as said company shall deem most suitable; and has been amended and continued in force by successive Legislatures, to the present time.

The act of November 14th, 1857, provides that "if twenty five miles of said road be not completed and equipped on or before the first day of January, 1860, their said charter shall become null and void, and said company shall forfeit all their rights and privileges."

By section 10, of the original charter, it is provided "that the said company shall have power to borrow money on their bonds or notes, at such rates as the directors shall deem expedient."

Section 16. That said company shall have the right to

charge and receive such rates and prices for the transportation of passengers and freight, as shall not exceed eight cents per mile for passengers, and for freight not exceeding seventy-five cents per one hundred pounds, for every hundred miles the same may be carried."

By Section 1, of the act of February 14th, 1852, it is provided, "that there shall be granted to the San Antonio and Mexican Gulf Railroad Company eight sections of land of 640 acres each, for every mile of railway actually completed by them and ready for use, upon the application of the President of the company, stating that any section of five miles or more of said railway has been completed and is ready for use," etc.

By section 1, of the act of February 13th, 1854, the San Antonio and Mexican Gulf Railroad Company is "invested with the power of continuing their road from the City of San Antonio, by the nearest practicable route, to intersect with the Mississippi and Pacific Railroad, west of the Red Fork of the Colorado River." And by Section 6, of said act "the franchise of said San Antonio and Mexican Gulf Railroad Company, in case they accept the benefits of this Supplemental Act, shall cease and determine at the end of ninety-nine years."

By the act of November 14th, 1857, said company is entitled to the benefits of the act approved January 30, 1854, entitled "An act to encourage the construction of railroads in Texas by donations of lands," granting sixteen sections of land, of 640 acres each, or 10,240 acres of land for each mile of railroad constructed, to be received when a section of 25 miles or more is completed. It is also provided by said act, that said company shall be entitled to all the benefits of an act, entitled "An act to provide for the investment of the Special School Fund, in the Bonds of Railroad Companies (previously) incorporated by the State, approved August 13th, 1855," whereby \$50,000 per mile is loaned to Railroad Companies, by the State, in United States five per cent. Bonds, on the completion of a section of twenty-five miles of railroad, and the grading of an additional section of twenty-five miles, ready for the cross-ties.

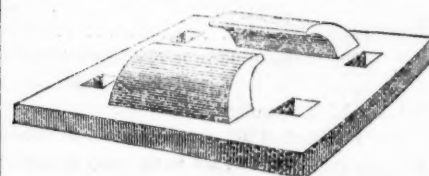
By the foregoing it will be seen that this company is entitled to receive sixteen sections, or 10,240 acres of land in all, for each mile of road on the completion of a section of twenty-five miles. This land may be received entirely under the provisions of the General Land Law, or half of it under that law, and the other half under the Supplemental Charter approved February 14th, 1852. By the former act the lands are required to be surveyed in "sections of 640 acres each, and in square blocks of not less than six miles, unless prevented by previous surveys or a navigable stream." The State reserving the alternate sections of such blocks; but by the latter act the company may locate "upon any unappropriated domain of the State of Texas," and make its surveys to any extent that may be desirable, without being compelled to reserve alternate sections for the State. A privilege of very great value, whether the company locates the certificates or chooses to sell them.

The Engineer of the Company, in a late Report, states that "upon neither the first, nor second sections of the road are there any important or expensive bridges, and this item of expense, usually so large will, upon this road be merely nominal," and the average grade is only 5.5 feet per mile, on the next section of grade.

The right of way has been secured on nearly the whole extent of the road.

All the maps, plates, surveys, profiles, plans and specifications in the possession of the company, will be delivered to the purchaser or purchasers.

619

**JACOB ROWE,**

GENERAL COMMISSION MERCHANT,

Nos. 6 & 8 Broadway, and 8 Beaver St.

ORDERS received for all sizes: MERCHANT, B & R and
RAILROAD IRON, AMERICAN and SCOTCH
PIG IRON, SUPERIOR WROUGHT IRON RAILROAD
CHAIRS, SPIKES, CAR WHEELS, NAILS, ETC., ETC.

OFFICE, 8 BROADWAY.

Corner Beaver st., opposite the Bowling Green, NEW YORK.

REFERS TO
Messrs. Cooper & Hewitt, Messrs. Stillman, Allen & Co.
Messrs. Wm. Outhout & Bro., Peter Cooper, Esq.
Messrs. Marshall Lefferts & Bro. James L. Jackson, Esq.

JAMES C. LANE,

Ex-Chief Engineer of Explorations in South America, &c.

MECHANICAL AND CONSULTING ENGINEER,**Times Building, 41 Park Row.**

Room No. 4, NEW YORK.

PATENTS NEGOTIATED.

DRAWINGS Specifications, and Models, (metal or wood)

Applications for Patents, and all business whatever con-

nected with Patents attended to with economy and despatch.

Application for PATENT, including drawings, specifications

and Patent Office fees, \$50.

Patents for Inventions.

T. D. STETSON, Agent for procuring patents, No. 5 Tryon
St. Row, (near City Hall). A circular with full information
sent free by mail.

American correspondent Proc. Mechanics' Jour. from 1851



THE McCALLUM BRIDGE COMPANY.

(OFFICE No. 110 BROADWAY—over Metropolitan Bank—NEW YORK.)

ARE prepared to construct Railroad, Draw, and other Bridges and Railroad Depots at any point in the United States or Canada, on as favorable terms as any other parties.

Their plan of Bridge is known as "McCALLUM'S PATENT INFLEXIBLE ARCHED TRUSS," and is claimed to be superior to, and more economical than any other form of bridge now in use.

The principles upon which this bridge is constructed, remove the necessity for adjustment, cause it to be inflexible, and allow of much longer spans than can be used with any other truss bridge.

They are also prepared to construct Roofs of churches, halls, or other buildings where arched ceilings are required, upon a new and peculiar plan, by which cross-tie beams or rods are entirely avoided, leaving the whole space to the peak unobstructed, while the side walls are not subjected to the slightest thrust.

Engineers, Officers of Railroad Companies, Architects, and others desiring information are requested to call and examine models, plans, etc., or address this Company at 110 Broadway.

D. C. McCALLUM, President.

ENGINEERING, ARCHITECTURAL, SURVEYING, BUILDING, AGRICULTURAL, MONUMENTAL AND DECORATIVE WORKS.

All the last new works on these subjects are published by ARCHLEY & Co., No. 106 Great Russell St., LONDON. NEW LISTS OF WORKS SENT POST FREE TO ORDER.

ENGINEERING PRECEDENTS.

JUST PUBLISHED—8vo, 127 pp., \$1.25. Sent free on receipt of the price. FISHERWOOD'S (B. T. Chief Engineer U. S. Navy) ENGINEERING PRECEDENTS for STEAM MACHINERY, embracing the Principles of Steamships' Experiments with Propelling Instruments, Condensers, Boilers, etc., accompanied by Analysis of the same; the whole being original matter and arranged in the most practical and useful manner for Engineers. H. BAILLIÈRE, No. 290 Broadway.

Mechanical Books.

RAILWAY MACHINERY;

A treatise on the Mechanical Engineering of Railways; embracing the Principles and Construction of Rolling and Fixed Plant, in all departments. Illustrated by a Series of Plates on a large scale, and by numerous Engravings on Wood. By DANIEL KINNEAR CLARK, Engineer. 2 vols. half-morocco, \$24.

"This work contains the best published information extant upon locomotives. It is recommended to all builders, engineers, and machinists, as giving more useful, practical, and philosophical instruction at a cheaper rate than could be obtained by the purchase of any other work."—American Railroad Journal.

GRIER'S Mechanic's Pocket Dictionary;
Ninth edition. Bound, \$2.25.

GRIER'S Mechanic's Calculator;
Sixteenth edition. Bound, \$1.33.

THE ENGINEER AND MACHINIST'S DRAWING-BOOK;

Illustrated by numerous Engravings on wood and steel. Half-morocco, \$10.50.

"A complete and reliable Work on the draughting of machinery in all its details, exhibiting a high style of art. We are confident that this book will form an important element in the education of our young mechanics."—Scientific American.

BLACKIE & SON,
117 Fulton St.,
NEW YORK.

MINE ENGINEERING.

JUST PUBLISHED.

PRACTICAL MINER'S GUIDE,

A TREATISE on Mine Engineering comprising a set of Trigonometrical TABLES adapted to all purposes of Mining or diagonal, vertical, horizontal and traverse DIALING, with the application to the dial exercise of Shafts, Adits, Drifts, Lodes, Sides, Levelling, etc. Also, a treatise on ASSAYING METALS, with tables, which exhibit at one view the value of Assayed Ores; rules for calculating the power of Steam, Water, and Cornish Pumping Engines; quality, manufacture and choice of Cordage and Wire Rope for Mine service; on Gases, Ventilation and Lighting of Mines, Boring Artesian Wells, etc., etc.; together with a collection of essential Tables, Rules and Illustrations, exclusively applicable to Mining Business. Price \$2.25 by mail. Can be ordered of any Bookseller. Published by GEO. M. NEWTON.

At the office of the Mining Magazine, No. 1 Spruce St., N.Y.

FINANCIAL.

G. M. TRACY & CO.,
STOCKS, BONDS, ETC.
LOANS NEGOTIATED.

No. 49 EXCHANGE PLACE,
NEW YORK.

CINCINNATI STOCK EXCHANGE.

KIRK & CHEEVER,
Stock Brokers and Railroad Agents,
No. 83 WEST THIRD STREET,
CINCINNATI, OHIO.

Railroad Stocks, Bonds, &c., bought and sold on commission. Regular sales at public auction at the MERCHANTS' EXCHANGE.

SIMEON DRAPER, Auctioneer.

By SIMEON DRAPER,
Office, No. 36 PINE ST., NEW YORK.
REGULAR AUCTION SALES
AT THE MERCHANTS' EXCHANGE EVERY DAY.
STOCKS and BONDS bought and sold at private sale
Sales every day at 12 1/2 o'clock. See Catalogue.

W. P. STEELE & CO.,
BANKERS,
23 WILLIAM STREET, NEW YORK.
STOCKS and BONDS Bought and Sold on Commission.
Mercantile Paper and Loans negotiated.
Advances made on all approved Securities.
COLLECTIONS MADE throughout the United States and Canada.

DINGEE & HOLDEN,
AUCTIONEERS AND REAL ESTATE BROKERS,
No. 9 NASSAU STREET,
Under Messrs. DUNCAN, SHERMAN & Co.
SOLOMON DINGEE,
CHARLES E. HOLDEN. NEW YORK.
Stocks, Bonds, Mortgages, & Commercial Paper Bought & Sold.

REFERENCES.
Citizens' Bank, N.Y. Hon. E. D. Campbell, Lt. Gov., N.Y.
Messrs. Thompson Bros., Bankers, Hon. Judge Lord, La Crosse, Wis.
Messrs. Sewell, Ferris & Co., Hon. M. L. V. Barker, " "
Geo. P. Rogers, Esq., Hon. Franklin Steele, Minn.
A. Gridley, President McLean Co. Bank, Illinois. A. & W. A. Saunders, Bankers, Mt. Pleasant, Iowa.

A. T. MILLS. D. W. C. JUDAH.
To Railroad Companies & CONTRACTORS.
MILLS & CO.,
55 EXCHANGE PLACE,
Negotiate RAILROAD BONDS and STOCKS.
PURCHASES of Railroad Equipments made upon order, for moderate commissions.

PETERS, CAMPBELL & CO.,
BANKERS AND DEALERS IN
DOMESTIC EXCHANGE AND BANK NOTES,
No. 50 WALL STREET,
NEW YORK.

SPECIAL ATTENTION GIVEN TO
COLLECTIONS
IN ALL PARTS OF THE UNITED STATES.

PETERS, SPENCE & CO., Lynchburg, Va.
D. T. C. PETERS, DAVID E. SPENCER,
N. H. CAMPBELL, DEXTER OTEY.

REFER TO
Jas. T. SOUTER, Esq., Pres't Bk Republic, New York City
American Exchange Bank,
Banks and Bankers, Richmond and Lynchburg, Va.

R. H. RICKARD,
MINING AGENT & STOCK BROKER,

Office No. 21 Nassau St., NEW YORK.
BUYS and sells MINING SHARES, MINES and MINERAL LANDS on commission, will examine Mines and Mineral Lands in any part of the United States, and report on their value, etc., etc.

REFERENCES:—P. Chouteau, Jr., & Co., New York and St. Louis, the Hon. Wm. M. Gwin, U. S. Senator, the Hon. C. A. Peabody, N. Y., the Hon. Sam. F. Butterworth, N. Y., Frost & Forrest, Com. Mer's N.Y., John F. Butterworth, Esq., N.Y., G. O. Williams & Co., Detroit, Mich., Capt. D. Tyler, Norwich, Conn., Kittenhouse, Fant & Co., Bankers, Washington, D. C. Particular attention given to Lake Superior business.

DUNCAN, SHERMAN & CO.,
BANKERS,
Corner PINE and NASSAU STS.,
NEW YORK.

CIRCULAR NOTES and LETTERS OF CREDIT,
FOR TRAVELERS,
AVAILABLE IN ALL THE PRINCIPAL CITIES OF THE WORLD.
ALSO, MERCANTILE CREDITS,
For use in EUROPE, CHINA, etc.

MORSE & CO.,
BANKERS AND DEALERS in Stocks, Bonds, Exchange and Commercial Paper, on commission, No. 49 Wall Street, and 41 William Street, NEW YORK.
Orders for the purchase and sale of Stocks and Bonds, at the Brokers' Board, by letter or otherwise, promptly executed.
Cash advanced on sound saleable securities.

REFER TO
G. VAN BAUR & CO., N.Y. CONTINENTAL BK, N.Y.

EUGENE THOMSON,
STOCK AUCTIONEER AND BROKER,
No. 37 William St., NEW YORK.

AUCTION SALES of STOCKS and BONDS every TUESDAY, at 12 1/2 o'clock, at the Merchant's Exchange. RAILROAD BANK, INSURANCE and other SECURITIES bought and sold at the BROKERS' BOARD, at Private Sale, or at Auction. All dividends payable in New York collected, and prompt remittances made.

NONE BUT bona fide quotations FURNISHED THE PRESS. THE MARKET VALUE OF SECURITIES WILL NOT BE SUPPRESSED OR ALTERED, AND DECEPTIVE OR IRRESPONSIBLE CATALOGUES WILL NEVER BE ISSUED.

A statement showing the capital, dividend months, and last semi-annual dividend of the Banks and Insurance Companies of the city of New York, will be forwarded by mail upon application.

REFERENCES.—Messrs. Wm. and Jno. O'Brien, Thos. Denny & Co., Horace Greeley & Co., Cragin & Co., Todd & Co., J. & C. Berrian, Geo. F. Nesbitt & Co., Eugene Plunkett, Esq., (President Excelsior Ins. Co.), John G. Storm, Esq., (President Lenox Ins. Co.), L. G. Irving, Esq. (Secretary Niagara Ins. Co.), Marcus Spring, Esq., Oliver H. Lee, Esq., John H. Griscom, M. D., Rev. Edwin F. Hatfield, D. D., Rev. Theo. L. Cuyler, John Cameron, Esq., Benj. F. Manierre, Esq., New York; Otis Allen, Esq., Albany N. Y.; Messrs. Gorham & Co., Providence, R. I.

A. H. DYETT,
STOCK AND BOND BROKER,
No. 43 EXCHANGE PLACE,
NEW YORK.

CHAS. A. FISHER,
Late of the firm of FISHER, DENNY & CO.,
No. 18 Exchange Place.
STOCKS and Bonds bought and sold on commission. Loans negotiated.

H. MEIGS, Jr. & SMITH,
BANKERS and BROKERS,
 39 WILLIAM STREET,
 (FIRST BUILDING BELOW WALL STREET.)
 STOCKS and BONDS Bought and Sold on Commission.
 MERCANTILE PAPER and LOANS Negotiated.
 INTEREST ALLOWED ON DEPOSITS.
 HENRY MEIGS, JR. WM. ALEX. SMITH.
 New York, May 11, 1855.

NEW HAVEN ARMS CO.,
 MANUFACTURERS OF THE CELEBRATED
VOLCANIC
REPEATING FIRE ARMS,
 COMPRISING
 RIFLES, CARBINES AND PISTOLS,
 WITH AMMUNITION WARRANTED WATER PROOF,
NEW HAVEN, CONN.

Depot for Sales, 267 BROADWAY, NEW YORK.
 JOSEPH MERWIN, Agent.

TUBULAR RAIL.



Railroad Managers will be interested by an examination of the "TUBULAR RAIL," patented in Europe and America by STEPHENS & JENKINS, Covington, Ky. These rails have decided advantages over any rail hitherto made, among them the following:—

The "Tubular Rail" of 50 lbs. per yard has greater strength and elasticity, with the same outside surface as solid rails of 60 lbs. per yard.

Its density is greater,
 Its welding nearer perfect, and
 Its durability superior.

Unlike other new forms of rail, it can be put down on the same chairs, and with the same fastenings, used with common T rails.

The arrangements to manufacture are such that these rails can be furnished of any American or Foreign make.

Reference is made to the officers of all the railroads in the vicinity of Cincinnati.

Additional particulars and circulars may be had by addressing

E. W. STEPHENS,
 Cincinnati, Ohio.

RAILROAD IRON.

THE subscribers are prepared to contract for RAILS delivered at an English port or at a port in the United States. Also for all descriptions of

RAILROAD EQUIPMENTS

upon favorable terms.

JOHN W. HULL & CO.,
 No. 41 Exchange Place, NEW YORK.

RAILROAD IRON.

The Subscribers, Agents for the Manufacturers, ARE PREPARED TO CONTRACT FOR THE DELIVERY OF RAILROAD IRON AT ANY PORT in the United States or Canada, or at a shipping port in Wales.

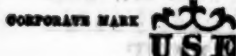
WAINWRIGHT & TAPPAN,
 Boston, June, 1851. 29 Central Wharf.

STEEL, FILES, &c.

R. GROVES & SONS,
SHEFFIELD, ENGLAND,

MANUFACTURERS of warranted Cast Steel, superior quality, for Tools, Machinery, and Engineering purposes. Single and Double Shear, Blister, German Spring and Sheet Steel of every description—also, Cast Steel Files of high reputation, especially adapted for the use of Machinists, and Saws and Edge Tools of all kinds.

A stock of the above goods constantly on hand.



CHAS. CONGREVE & SON, Agents,
 13 Cliff street, N. Y.

RAILROAD IRON.

The Undersigned, Agents for the Manufacturers, ARE PREPARED TO CONTRACT TO DELIVER Free on Board at Shipping Ports in England, or At Ports of Discharge in the United States, RAILS OF SUPERIOR QUALITY, And of Weight or Pattern as may be required.

VOSE, LIVINGSTON & CO.,
 New York, Aug. 1, 1855. 9 South William Street

RAILROAD IRON.

THE subscriber is prepared to enter into CONTRACTS FOR RAILS delivered at an English port or at a port in the United States.

JAMES TINKER,
 54 Exchange Place,
 NEW YORK.

Eric Rails, 57 to 58 lbs. per yard, on hand in NEW YORK and NEW ORLEANS.

RAILROAD IRON.

The undersigned, Agents for leading Manufacturers in STAFFORDSHIRE AND WALES, ARE PREPARED TO CONTRACT FOR DELIVERY On board ship at Liverpool, or Welsh port.

G. CONGREVE & SON,
 13 Cliff st., N. Y.

RAILROAD IRON.
CONTRACTS FOR RAILS,
 AT A FIXED PRICE OR ON COMMISSION,
 DELIVERED AT AN ENGLISH PORT,
 Or at a Port in United States,

WILL BE MADE BY THE UNDERSIGNED,
 THEODORE DEHON,
 10 Wall st., near Broadway, New York.
 500 tons T rails on hand 54 to 57 lbs. per linear yard.

RAILROAD IRON.

WELSH or Staffordshire make, delivered on board at an English port or at a port in the United States.

NORRIS & BROTHER,
 BALTIMORE.
 6m35 And 17 Nassau st., NEW YORK.

IRON BOILER FLUES.

Lap-Welded Boiler Flues,
 1½ to 7 inches outside diameter, cut to definite length, 2 to 20 feet as required.

Wrought Iron Welded Tubes,
 From ½ to 5 inches bore, with Screw and Socket Connections. T's, L's, Stops, Valves, Flanges, &c., &c.

MANUFACTURED AND FOR SALE BY
MORRIS, TASKER & CO.,
PASCAL IRON WORKS.

Established 1831.

Warehouse—209 South Third st.,
PHILADELPHIA.

STEPHEN MORRIS, CHAS. WHEELER, JR.,
 THOS. T. TASKER, JR. STEPHEN P. M. TASKER.

RAILROAD IRON AND COMMON BARS.

THE UNDERSIGNED,
 Sole Agents to Messrs. GUEST & CO.,
 The Proprietors of the Down's Iron Works,
 Near Cardiff, South Wales,

ARE duly authorized to contract for the sale of their G. L. Railroad Iron, and Common Bars, on most advantageous terms.

R. & J. MAXIN, 70 Broad st.

MORRIS & JONES & CO.,

IRON MERCHANTS,
 MARKET AND SIXTEENTH STREETS,
PHILADELPHIA.

IRON AND STEEL

IN ALL THEIR VARIETIES.

BOILER PLATE, OAR AXLES,
 BOILER RIVETS, RAILROAD IRON,
 CUT NAILS and SPIKES, PIG IRON, etc.

Having the selling agency of a number of the Rolling Mills Furnaces and Forges in this State, orders for any description of Iron can be executed.

August 16, 1854

1y23

American Railroad Iron.

THE undersigned is prepared to contract for delivery of American Railroad Iron at points on the Mississippi, Ohio and Tennessee Rivers. Rails can be furnished 27 to 30 feet long when required.

JAMES HENDERSON,
 13 Cliff st., New York.

RAILROAD IRON.

The Crescent Manufacturing Company,
WHEELING, VA.,

ARE now prepared to execute, at short notice, orders for Rails of any required pattern and weight, and to re-roll old rails, on the most liberal terms.

N. WILKINSON, Sec'y,
 WHEELING, VA.

THE
RAILROAD IRON MILL COMPANY,
CLEVELAND, OHIO,
 MANUFACTURERS EXCLUSIVELY OF
RAILROAD IRON.

THIS is a new ROLLING MILL, having been working only eighteen months, and confined to work for roads on this line between Buffalo and Chicago in re-rolling old Rails. The capacity is Forty Tons per day. It is well situated for receiving old Rails, either by Railroad or Lake.

Orders are now solicited

From Roads in other sections of the country; and work will be made with New Iron in the hands, if desired.

Apply to

ALBERT G. SMITH,
 President of the Incorporation.

February, 1855.

RAILROAD IRON.

WOOD, MORRELL & CO.,

Having leased the extensive Works of the

Cambria Iron Company,

Situated at JOHNSTOWN, CAMBRIA CO., PENNA.,

And purchased all their real estate,

ARE now prepared to execute, at short notice, orders for RAILS of any required pattern or weight, on the most liberal terms.

Philadelphia Office, } North Penna. R. R. Building,
 No. 407 Walnut st.

ROUND OAK IRON WORKS,

STAFFORDSHIRE, ENGLAND.

Lord WARD, Proprietor.

MANUFACTURE RAILS, BOILER PLATES, SHEETS, HOOPS and BARS, of every variety of pattern.

NORRIS & BROTHER,

Agents for the United States,

12 SOUTH CHARLES STREET,

BALTIMORE.

6m35 And 17 NASSAU STREET, NEW YORK.

RAILROAD IRON.

THE RENSSELAER IRON COMPANY,
TROY, N. Y.,

OFFER Rails of their own manufacture deliverable as may be desired by purchasers.

OLD RAILS

received in exchange for new, or for re-manufacturing.

JOHN A. GRISWOLD, Agent,

TROY, N. Y.

New York Agency:

BUSSING, CROCKER & DODGE,

32 Cliff St.

LACKAWANNA

IRON AND COAL COMPANY,
SCRANTON, LUZERNE CO., PA.

BY the completion of the Delaware, Lackawanna and Western Railroad, this Company are enabled to obtain the Magnetic Ores from the most celebrated mines in New Jersey, which used in combination with their native ores, produce a quality of iron not surpassed.

These works have been greatly enlarged the past year, and are, therefore, prepared to execute orders promptly for RAILROAD IRON of any pattern and weight, Oar Axles, Spikes, and Merchant Iron. They have on hand patterns for T rails, of the following weights per lineal yard, viz:—25, 30, 35, 40, 45, 50, 60, 62, and 75 lbs.

Samples of Rails and Merchant Iron may be seen at the office of the Company, 46 Exchange Place, New York.

Address J. H. SCRANTON, President,

SCRANTON, Pa.

or THEO. STURGES, Treasurer,

46 Exchange Place,

NEW YORK.

401f

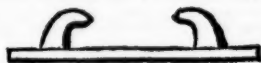
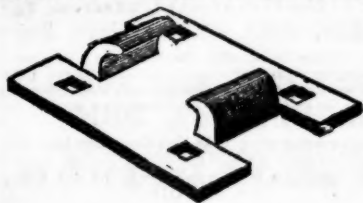
NEW YORK RAILROAD CHAIR WORKS.

J. B. GREEN & CO., Proprietors.

SUCCESSORS TO THE

New York Wrought Iron Railroad Chair Company.

Office, No. 51 Exchange Place, New York.



HAVING recently purchased, at Receiver's Sale, all the Patent Rights owned by the late *New York Wrought Iron Railroad Chair Company*, and also the entire machinery for manufacturing their improved Wrought Iron Railroad Chair, we are now fully prepared to receive and fill all orders from responsible parties, to any extent, with promptness and dispatch.

The thickness of the lips of our Chair increases through the bend, where the greatest strength is required, and diminishes towards the edge; so that a less weight of metal may be used, and a strength acquired equal, if not superior, to that of a heavier Chair of uniform thickness.

We invite the attention of parties wishing the best Wrought Iron Chair now in market, to our works for a supply; believing they combine qualities superior to any others now manufactured.

The Chairs weigh from seven and a-half to fifteen pounds, according to the thickness of the Iron and size of the Chair. To enable us to give you a perfect fit, it will be necessary always to send a section of the Rail. We cannot undertake to make Chairs without a proper pattern, as it is impossible to make a perfect fitting Chair from a drawing.

Our manufacture of Chairs are used on a large number of Roads, of which the following list comprises some of them, viz

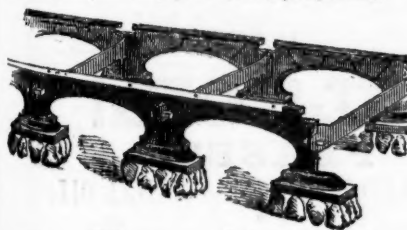
Galena and Chicago Union Railroad Company,
North Carolina Railroad Company,
New Jersey Central Railroad Company,
Panama Railroad Company,
Buffalo and State Line Railroad Company,
New York and New Haven Railroad Company.

Messrs. M. K. JESUP & CO., 44 Exchange Place, New York, are the only parties authorized to act as our Agents.

BEERS' CAST-IRON ENDLESS RAIL, FOR CITY RAILROAD;

Now being laid in Philadelphia and elsewhere;

THIS road is exclusively of cast iron, without tie, string-piece, or chair; Rail 85 to 100 lbs. per yard; Durability four fold over the present roads, with 66 lbs. groove rail: And with a saving on first cost; effecting a reduction in current yearly repairs, and relays, of at least \$1,000 per mile.



Also,—

BEERS' ELASTIC IRON RAILWAY, FOR LOCOMOTIVE USE;

This road can be built and equipped, without additional cost over a road with 66 lbs. T rail; saving not less than 60 per cent. on motive power, 50 per cent. on dead weight, and 50 per cent. on repairs of way; thus reducing the yearly expenses from \$1,500, to \$2,000, per mile. For full particulars, with drawing, relating to both roads, see a recent Treatise, entitled *Railroads, their construction and management*, with the remedy, from twenty-five years experience, by S. A. BEERS, Civil Engineer, BROOKLYN, N. Y. Price 60 cts. Address the author.

The undersigned is prepared to construct, by contract, the above roads, in any part of the U. S. or Europe, at the shortest notice, being aided by a staff of contractors of the most extensive experience.

S. A. BEERS.

GEO. M. FREEMAN,

SUCCESSOR TO

PRATT & FREEMAN, PHILADELPHIA RAILWAY SUPPLY AGENCY, No. 123 WALNUT STREET, PHILADELPHIA.

Railroad Materials, Locomotive and Car Findings,
MACHINERY AND MACHINISTS' TOOLS,
MINERS' TOOLS, ETC.

✓ COTTON WASTE. ✓
WHITE AND YELLOW CAR GREASE,
LOCOMOTIVE BRASS WORK,
Baggage Checks, Barrows, etc., etc.,

RAILROAD LANTERNS, SIGNAL LIGHTS,
STEAM GAUGES, COCKS AND WHISTLES,
INDIA RUBBER HOSE PACKINGS, ETC.
LANTERNS OF ALL DESCRIPTIONS,
ENGINE, STATION, AND SIGNAL BELLS,
✓ Superior Car Upholstery, etc. ✓

AGENCY OF THE KEROSENE OIL COMPANY.

✓ Orders solicited, promptly filled, and forwarded with despatch and care at the manufacturers' lowest prices.

HOLT, GILSON & CO.,

MANUFACTURERS AND DEALERS

IN RAILROAD & STEAMBOAT SUPPLIES,

5 WATER ST., BOSTON.
LOCOMOTIVES AND CARS.

Rails, Sleepers, Chairs, Spikes, Wheels, Axles and Tires.

BOILER TUBES AND FELTING.

BOLTS, NUTS & WASHERS.

CAR, SHIP AND BRIDGE BOLTS.

Locomotive, Hand and Ship Lanterns; Car Trimmings of all descriptions. Steam and Water Gauges; Signal Bells, etc., etc.

AGENTS FOR CAR HEAD LININGS.

Sole Agents for TOMES' celebrated GAUGE GLASSES, and PACKER'S IMPROVED RATCHET DRILL.
Orders filled with despatch and at the lowest prices.

RAILROAD SUPPLIES.

GILBERT, MURDOCK & CO.,
No. 9 NASSAU STREET,
NEW YORK,

ARE agents for, and prepared to furnish at manufacturers' prices,

RAILROAD IRON,
LOCOMOTIVE ENGINES,
RAILROAD CARS,
CAR WHEELS,
AXLES, CHAIRS,
SPIKES, TOOLS,
ETC., ETC.

All inquiries in reference to the above articles will receive immediate attention.
New York, January, 1859.

S. B. BOWLES,
MANUFACTURER AND DEALER IN
RAILROAD
SUPPLIES,
No. 12 GOLD STREET,
(Between PLATT and MAIDEN LANE),
NEW YORK.

RAILROAD SUPPLIES.

WILLIAMS & PAGE,

No. 44 Water, between Congress and Kilby Streets,

Boston, Mass.

Iron Rails, Chairs, & Spikes,
FREIGHT AND COAL CARS,

(on hand or made at short notice.)

Wheels and Axles of all kinds,

LOWMOOR, AMES', BOWLING AND NASHUA TIRES,

IRON AND STEEL,

Of all kinds for Shops and Tracks.

Car Trimmings, Paints, Oil, Varnish, Car and Switch Locks, Ventilators, Lanterns, Head-Lights, Gauges, Rubber Springs, Chairs, Hose and Belting, Ash, Pine and other Timber, and ALL MATERIALS USED in Equipment and Repairs of Railroads, Engines and Cars, at lowest prices.

THOS. S. WILLIAMS, PHILIP S. PAGE,
Late Sup't Boston & Maine R. R. Late Page, Alden & Co.

REFERENCES.

JAMES HAYWARD, President PHILIPS, DODGE & Co., N. Y.
Boston and Maine R. R. COOPER, HEWITT & Co., do.
Capt. WM. H. SWIFT, Boston. REEVES, BUCK & Co., Phila.
LAWRENCE STONE & Co., do. E. S. CHESBROUGH, Chicago.
S. M. FELTON, Pres't Phila. W. & B. R. R.

A. BRIDGES & CO.,

MANUFACTURERS AND DEALERS IN

RAILROAD AND CAR FINDINGS,

OF EVERY DESCRIPTION,

64 COURTLANDT ST., NEW YORK.

RAILROAD AXLES, WHEELS AND CHAIRS,
SPIKES, BOLTS,
NUTS, WASHERS,
CAR, SHIP AND BRIDGE BOLTS.
IRON FORGINGS OF VARIOUS KINDS, ETC., ETC.
STEEL AND RUBBER SPRINGS,
LOCOMOTIVE AND HAND LANTERNS,
PORTABLE FORGES AND JACK SCREWS,
COTTON DUCK FOR CAR COVERS,
BRASS AND SILVER TRIMMINGS.

Also, Sole Agents for the Manufacturers of Car Head Linings.

Orders for the purchase of goods on commission, aside from our regular business, respectfully solicited.

ALBERT BRIDGES. JOEL C. LANE.

MORRIS K. JESUP, JOHN KENNEDY, GILBERT A. SMITH,
M. K. JESUP & CO.,
RAILWAY AGENTS AND BANKERS,
44 EXCHANGE PLACE,
NEW YORK,

AGENTS FOR THE SALE OF
FOREIGN AND AMERICAN RAILROAD IRON
AND ALL MATERIALS NECESSARY FOR THE
Construction, Equipment & Operating of Railways.
RAILWAY AND OTHER SECURITIES
BOUGHT AND SOLD
Either privately or at the Board of Brokers.

A. S. & A. G. WHITON

72 FINE ST., NEW YORK,

DEALERS IN

RAILROAD IRON,
CHAIRS AND SPIKES,
LOCOMOTIVES,
PASSENGER AND FREIGHT CARS.

MANUFACTURERS' AGENTS

FOR Miller's Iron Turn Tables, Dimpfel's Patent Blower,
Gardiner's Volute Car Springs and

RAILWAY SUPPLIES GENERALLY.

ALSO

NEGOTIATORS OF SECURITIES.

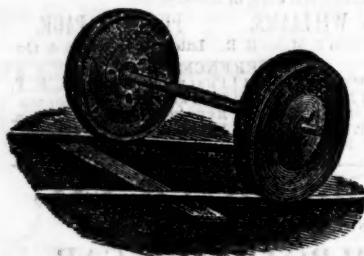
Railroad Iron.

THE undersigned have American and Foreign Railroad Iron for sale, deliverable in New York and other markets.
CASWELL & PERKINS,
 Brokers, 69 Wall st.
 New York, January 1, 1889.

Boston Locomotive Works,
 Late Hinkley & Drury,
 No. 380 HARRISON AVENUE,
BOSTON.

LOCOMOTIVE AND STATIONARY
STEAM ENGINES;
BOILERS;
 Iron, Brass, Copper and Composition Castings;
COPPERSMITH'S WORK,
 AND ALL KINDS OF RAILROAD MACHINERY
 FURNISHED AT SHORT NOTICE.

ALSO



**VAN KURAN'S IMPROVED
 RAILROAD WHEEL,**
 PATENTED MAY 1, 1849.
 Manufactured under the Personal Superintendence
 of the PATENTEE, as above.



ORDERS for any quantity of Wheels executed with dispatch, and Wheels and Axles fitted in the very best manner, and at the lowest rates.

Address **DANIEL F. CHILD,**
 Treasurer, BOSTON.

**THE JERSEY CITY
 LOCOMOTIVE WORKS,**

SUCCESSORS TO

**BREESE, KNEELAND & CO.,
 JERSEY CITY, N. J.**

MANUFACTURE COAL or WOOD BURNING
 LOCOMOTIVES, Steam Fire Engines,
 Portable ENGINES and BOILERS, Cast Steel
 SPRINGS for Engines, Tenders, Passenger or Freight
 Cars; SHAFTING and ALL KINDS of RAIL-
 WAY MACHINERY.

They also furnish to order TYRES, DRIVING WHEELS
 and AXLES, CASTINGS and FORGINGS.

Boiler Work furnished with dispatch.

G. M. WHEELER, **C. KNEELAND,**
 PRESIDENT. SECRETY & TREASR.

W. G. HAMILTON, V. P. & Eng'r.

OFFICE IN NEW YORK—49 WILLIAM ST.

UNION WORKS, BALTIMORE.

POOLE & HUNT,

Iron Founders and General Machinists,

ARE prepared to fill at short notice and of best materials
 and workmanship, orders for

Steam Engines of any Size.

PLATE CAR WHEELS and CHILLED TYRES, equal
 to any produced in the country.

WHEELS AND AXLES fitted for use.
 HYDRAULIC PRESSES for expressing Oils and for
 other purposes.

MACHINERY of the most approved construction for Flour-
 ing and Saw Mills.

GAS HOLDERS of any size, and Machinery and Castings
 of all kinds for Gas Works.

STEAM BOILERS and WATER TANKS of any size or
 description. SHAFTING, PULLEYS and HANGERS.

**THE ROGERS
 Locomotive & Machine
 WORKS,**

SUCCESSORS TO

ROGERS, KETCHUM & GROSVENOR,

PATERSON, N. J.,

HAVING extensive facilities, are now prepared to furnish
 promptly of the best and most improved description, either
 COAL or WOOD BURNING

LOCOMOTIVE ENGINES

AND OTHER VARIETIES OF

RAILROAD MACHINERY.

J. S. ROGERS, Pres't, { **Pateron, N. J.**
WM. S. HUDSON, Supt,

M. K. JESUP, Vice Pres't.

L. P. STARR, Sec'y and Treas'r.

44 Exchange Place, New York.

Locomotive Engines.

**DANFORTH, COOK & CO.,
 PATERSON, N. J.,**

HAVING erected an extensive Shop, with the most ap-
 proved Machinery and Tools, are prepared to execute
 orders for the various classes of Freight and Passenger Loco-
 motive Engines and Tenders, in the best manner and on the
 most favorable terms.

Also, Stationary Engines, and the various Tools suitable for
 turning Repair Shops.

The business of Machine making, heretofore carried on by
 Charles Danforth & Co., is continued by the present firm, and
 all orders will receive prompt attention. 1749

**THE SCHENECTADY
 LOCOMOTIVE WORKS,**

SCHENECTADY, N. Y.,

HAVING large facilities, are prepared to receive and ex-
 ecute orders for

LOCOMOTIVE ENGINES AND TENDERS,

either for burning WOOD or COAL, with promptness and
 dispatch.

BRASS and IRON CASTINGS; LOCOMOTIVE TYRES
 welded and blocked to exact sizes, and every thing connected
 with the building or repairing of Locomotives furnished on
 short notice.

These Works being located on the New York Central Rail-
 road, near the centre of the State, possess superior facilities
 for forwarding their work to any part of the country, without
 delay.

JOHN ELLIS, Agent.

WALTER McQUEEN, Superintendent.

**RICHARD NORRIS, HENRY LATIMER NORRIS,
 RICHARD NORRIS & SON,**

LOCOMOTIVE STEAM ENGINE

BUILDERS,

SEVENTEENTH STREET, ABOVE CALLOWHILL,

PHILADELPHIA,

REGIONS EXCLUSIVELY IN THE MANUFACTURE OF

LOCOMOTIVES,

RAILWAY TOOLS AND

MACHINERY.

MANUFACTURE to order, Locomotives of any Arrange-
 ment, Weight or Capacity. In Design, Material and
 Workmanship, the Locomotives produced at these Works,
 are equal to, and not excelled by any.

WEST POINT FOUNDRY.

R. P. PARROT, Lessee.

Manufacturer of Marine and Stationary

ENGINES,

Sugar Mills, Saw Mills, Iron Bridges, Cannon,

WATER PIPES, BOILERS, IRON BUILDINGS,

CASTINGS & FORGINGS OF ALL KINDS.

WM. KEMBLE, { **Agents,**

CHAS. J. NOURSE, { 29 West Street.

MACHINERY OIL.

REFINED NEAT'S FOOT OIL

WARRANTED NOT TO GUM

AND equal in every respect to the best SPERM OIL for all
 kinds of machinery use.

PETER COOPER,

17 Burling Slip,

New York.

**THE IMPERIAL
 LUBRICATING OIL,**

MANUFACTURED BY

J. C. HULL & SONS,

(Formerly W. HULL & SON.)

108, 110, 112, 114, 116 and 118 Cliff st.,

NEW YORK.

FOR RAILROADS,

STEAMSHIPS, MILLS, MACHINE SHOPS, ETC.

THIS OIL having been before the public for a long time,
 and having been extensively used in different parts of the
 country, and on each occasion meeting with unqualified ap-
 proval, renders the manufacturers confident when making the
 following claims:—

1st. Its first cost is vastly less than that of any Oil in use,
 of known merit or acknowledged worth.

2nd. It will not in any way gum or clog up any
 journal or bearing, all the gum in the Oil being entirely decom-
 posed.

3rd. It will keep all journals and bearings cool, clean
 and bright as new, thus not only saving wear and tear, but
 saving also no inconsiderable amount of motive
 power.

4th. It is fully as durable as any Oil in the market, and
 consumers are invited to make their experiments on such jour-
 nals as are inclined to heat up.

5th. It is sweet and clean, and entirely free from all
 odor or unpleasant smell.

Also,—

**J. C. HULL & SONS'
 REFINED BURNING OIL.**

Buyers are requested to give this OIL a trial, as it is be-
 lieved that it will be found the

**CHEAPEST, CLEANEST AND BEST
 OIL FOR BURNING,**

(all things considered), in the market.

CERTIFICATES from a large number of Railroad
 and Steamboat officers, also, prominent Manufacturers
 and Machine Builders, can be seen by application as above.

TAW & BEERS,

DEALERS IN

Sperm, Whale and Elephant Oils,

Adamantine Car and other Candles,

AND MANUFACTURERS OF

**TAW'S LUBRICATING
 GREASE**

FOR RAILROAD CARS

AND HEAVY MACHINERY.

THIS celebrated GREASE has been in use upwards of
 Ten years; and is in the opinion of FORTY RAIL-
 ROAD COMPANIES, whom we regularly supply,

The Cheapest and Best Lubricant in use.

Parties ordering, will please state the kind of box, or descrip-
 tion of machinery.

TAW & BEERS,

18 SOUTH WATER ST.,

Philadelphia.

OIL! OIL!

PEASE'S

IMPROVED ENGINE and SIGNAL OIL,

FOR

RAILROADS, STEAMERS, PROPELLERS,

AND FOR EVERY CLASS OF

MACHINERY AND BURNING.

PRACTICAL TESTS, by Engineers and Machinists of
 Thousands of Gallons, prove this Oil to be superior
 for Burning, and TWENTY-FIVE per cent more
 durable than Sperm Oil, for Lubricating, and the only Oil
 that is in all cases reliable, that will keep bearings cool,
 and

WILL NOT GUM

In no case has it failed to meet the approval of the consumer.

The Scientific American and Manufacturer's Journal, after
 testing this Oil, pronounce it superior to any other for Lu-
 bricating.—For sale ONLY by the Inventor

F. S. PEASE, 61 Main st., BUFFALO.

Reliable orders filled for any part of the United States or
 Europe.